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J. Howell Way

TRANSACTIONS

—OF THE—

MEDICAL SOCIETY

DIVISION OF HEALTH SCIENCES LIBRARY

OF THE STATE OF

NORTH CAROLINA.

Forty-Fourth Annual Meeting

—HELD AT—

MOREHEAD CITY, N. C.,

JUNE 8, 9, AND 10, 1897.

10235

WILMINGTON, N. C.,
CAROLINA PUBLISHING COMPANY, PRINTERS.
1897.

ROSTER OF OFFICERS

——OF THE——

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

	DATE.	PLACE.	PRESIDENT.	VICE PRESIDENTS.	SECRETARY.	TREASURER.
	1849	Raleigh.	**F. J. Hill.**		W. H. McKee.	
1	1850	"	**Edmund Strudwick.**	F. J. Haywood, C. E. Johnston, J. E. Williamson, W. G. Thomas.	"	W. G. Hill.
2	1851	"	**Edmund Strudwick.**	C. E. Johnston.	"	"
3	1852	Wilmington.	**J. E. Williamson.**	Thos. N. Cameron, Wm. G. Hill, Johnston B. Jones, N. J. Pittman.	E. B. Haywood.	J. J. W. Tucker.
4	1853	Fayetteville.	"	W. G. Hill, Johnston B. Jones, J. G. B. Myers, N. J. Pittman.	W. W. Harris.	Daniel Dupree.
5	1854	Raleigh.	**J. H. Dickson.**	N. J. Pittman, J. G. B. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell.	"
6	1855	Salisbury.	"	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	"	J. B. Dunn.
7	1856	Raleigh.	**C. E. Johnston.**	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	"	"
8	1857	Edenton.	"	Marcellus Whitehead, O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas.	"
9	1858	Newbern.	**W. H. McKee.**	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	"	"

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10	1859	Statesville.	**W. H. McKee.**	Jas. G. Ramsay, J. R. Mercer,	P. E. Hines, W. T. Howard.	W. G. Thomas.	C. W. Graham.
11	1860	Washington.	**N. J. Pittman.**	P. T. Henry, M. Whitehead,	R. H. Winborne, T. S. Leach.	"	"
12	1861	Morganton.	"	J. J. Summerell, G. W. Hodges,	C. T. Murphy, W. A. B. Norcom.	"	"
13	1866	Raleigh.	**J. J. Summerell.**			"	"
14	1867	Tarboro.	**W. G. Thomas.**	E. Burke Haywood, W. L. Barrow,	R. H. Winborne, J. W. Jones.	S. S. Satchwell.	"
15	1868	Warrenton.	**S. S. Satchwell.**	Hugh Kelly, Chas. J. O'Hagan,	Geo. A. Foote. J. H. Baker.	Thos. F. Wood.	J. W. Jones.
16	1869	Salisbury.	**E. Burke Haywood.**	Thos. E. Wilson, C. T. Murphy,	A. B. Pierce, M. A. Locke.	"	"
17	1870	Wilmington.	**C. J. O'Hagan.**	E. A. Anderson, W. R. Sharpe,	F. N. Luckey, R. L. Payne.	"	"
18	1871	Raleigh.	**Hugh Kelly.**	D. N. Patterson, J. B. Seavy,	R. C. Pearson, G. L. Kirby.	"	"
19	1872	Newbern.	**W. G. Hill.**	H. W. Faison, G. H. Macon,	R. I. Hicks, W. A. B. Norcom.	Jas. McKee.	"
20	1873	Statesville.	**M. Whitehead.**	W. T. Ennett, Chas. Duffy,	William Little, T. P. German.	"	H. T. Bahnson.

21	1874	Charlotte.	**W. A. B. Norcom.**	J. B. Jones, C. G. Cox,	R. F. Lewis, J. L. Knight.	Jas. McKee.	H. T. Bahnson.
22	1875	Wilson.	**J. W. Jones.**	Walker Debnam, Wm. Little,	J. A. Gibson, D. N. Patterson.	"	"
23	1876	Fayetteville.	**Peter E. Hines.**	Jos. H. Baker, T. D. Haigh,	G. G. Smith, J. K. Hall.	"	"
24	1877	Salem.	**Geo. A. Foote.**	J. K. Hall, A. Holmes,	B. W. Robinson, A. A. Hill.	"	A. G. Carr.
25	1878	Goldsboro.	**R. L. Payne.**	E. M. Rountree, S. B. Flowers,	Richard Anderson, L. A. Stith.	L. J. Picot.	"
26	1879	Greensboro.	**Chas. Duffy, Jr.**	J. A. Gibson, Jas. McKee,	Willis Alston, A. A. Hill.	"	"
27	1880	Wilmington.	**J. F. Shaffner.**	J. K. Hall, W. R. Wilson,	W. C. McDuffie, R. F. Lewis.	"	"
28	1881	Asheville.	**R. B. Haywood.**	J. A. McRee, R. H. Speight,	W. H. Lilly, W J. H. Bellamy.	"	"
29	1882	Concord.	**Thos. F. Wood.**	T. J. Moore, S. E. Evans,	D. J. Cain, Jno. McDonald.	"	"
30	1883	Tarborough.	**J. K. Hall.**	A. W. Knox, E. S. Foster,	J. M. Hadley. Jno. Whitehead.	"	"
31	1884	Raleigh.	**A. B. Pierce.**	F. W. Potter, R. Dillard,	G. W. Graham, G. W. Long.	"	"

32	1885	Durham.	**W. C. McDuffie.**	Jas. McKee, T. E. Anderson, W. H. Whitehead, A. G. Carr.	W. C. Murphy.	R. L. Payne, Jr.
33	1886	Newbern.	**Jos. Graham.**	H. T. Bahnson, L. J. Picot, J. L. McMillan, W. W. Faison.	"	C. M. Poole.
34	1887	Charlotte.	**H. T. Bahnson.**	G. G. Smith, J. L. Nicholson, C. M. Poole, H. B. Ferguson.	"	"
35	1888	Fayetteville.	**T. D. Haigh.**	W. T. Ennett, J. A. Dunn, T. E. Anderson.	J. M. Baker.	M. P. Perry.
36	1889	Elizabeth City.	**W. T. Ennett.**	W. J. Jones, S. W. Stevenson, G. W. Long.	"	"
37	1890	Oxford.	**G. G. Thomas.**	R. L. Payne, Jr., Richard Dillard, S. D. Booth.	J. M. Hays.	"
38	1891	Asheville.	**R. H. Lewis.**	S. W. Battle, J. L. Nicholson, W. H. Lilly.	"	"
39	1892	Wilmington.	**W. T. Cheatham.**	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. D. Hilliard.	"	"
40	1893	Raleigh.	**J. W. McNeill.**	W. C. Galloway, H. H. Harris, J. M. Hadley, Thos. Hill,	R. D. Jewett.	"
41	1894	Greensboro.	**W. H. H. Cbb.**	J. A. Hodges, R. W. Tate, Willis Alston, M. H. Fletcher.	"	"
42	1895	Goldsboro.	**J. H. Tucker.**	J. H. Way, W. H. Harrell, O. McMullan, C. A. Meisenheimer.	"	"

ROSTER OF OFFICERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

43	1896	Winston-Salem.	**P. L. Payne.**	S. D. Booth, J. A. Burroughs.	J. P. Munroe, J. E. Grimsley.	R. D. Jewett.	M. P. Perry.
44	1897	Morehead-City.	**R. L. Murphy.**	J. C. Walton, M. R. Adams,	A. A. Kent, B. L. Long.	"	"

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

JAMES H. DICKSON, Wilmington....1859–1866
Charles E. Johnson, Raleigh....1859–1866
Caleb Winslow, Hertford....1859–1866
Otis F. Manson, Townsville....1859–1866
Wm. H. McKee, Raleigh....1859–1866
Christopher Happoldt, Morganton....1859–1866
J. Graham Tull, Newbern....1859–1866
SAMUEL T. IREDELL, Secretary....1859–1866
N. J. PITTMAN, Tarborough....1866–1872
E. Burke Haywood, Raleigh....1866–1872
R. H. Winborne, Edenton....1866–1872
S. S. Satchwell, Rocky Point....1866–1872
J. J. Summerell, Salisbury....1866–1872
R. B. Haywood, Raleigh....1866–1872
M. Whitehead, Salisbury....1866–1868
J. F. Shaffner, Salem....1868–1872
WM. LITTLE, Secretary....1866–1872
CHAS. J. O'HAGAN, Greenville....1872–1878
W. A. B. Norcom, Edenton....1872–1978
C. Tate Murphy, Clinton....1872–1878
Geo. A. Foote, Warrenton....1872–1878
J. W. Jones, Tarborough....1872–1878
R. L. Payne, Lexington....1872–1878
CHAS. DUFFY, JR., Newbern....1872–1878
P. E. HINES, Raleigh....1878–1884
T. D. Haigh, Fayetteville....1878–1884
R. I. Hicks, Williamsboro....1878–1880
Geo. L. Kirby, Goldsboro....1878–1884
Thos. F. Wood, Wilmington....1878–1884
Jas. Graham, Charlotte....1878–1884
H. T. BAHNSON, Salem....1878–1884
R. H. Lewis, Raleigh....1880–1884
WM. R. WOOD, Scotland Neck....1384–1890
A. W. Knox, Raleigh....1884–1890
Francis Duffy, Newbern....1884–1890
P. L. Murphy, Morganton....1884–1890
Willis Alston, Littleton....1884–1890
W. J. H. BELLAMY, Wilmington....1884–1890
J. A. Reagan, Weaverville....1884–1890
R. L Payne, Jr., Lexington....1890–1892
Geo. W. Purefoy, Asheville....1890–1892
Geo. G. Thomas, Wilmington....1890–1894
Robt. S. Young, Concord....1890–1894
Geo. W. Long, Graham....1890–1896
W. H. WHITEHEAD, Rocky Mount....1890–1896
L. J. PICOT, Littleton....1890–1896

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

JULIAN M. BAKER, Tarboro.....1892–1898	D. T. Tayloe, Washington.....1896–1902
H. B. Weaver, Asheville.....1892–1898	R. H. Whitehead, Chapel Hill.....1896–1902
T. S. Burbank, Wilmington.....1894–1900	Thos. E. Anderson, Statesville.....1896–1902
J. M. Hays,* Greensboro.....1894–1897	Kemp P. Battle, Raleigh.....1897–1900

*Service on Board terminated by death in May 1897.

Note.—The names of members who served as President appear in CAPS; of those who served as Secretary in Small Caps.

OFFICERS AND COMMITTEES.

SESSION 1897.

PRESIDENT.

P. L. Murphy, M.D., Morganton.

VICE-PRESIDENTS.

J. C. Walton, M.D., Reidsville.
A. A. Kent, M.D., Lenoir.
M. R. Adams, M. D., Statesville.
B. L. Long, M.D., Hamilton.

SECRETARY.

R. D. Jewett, M.D., Wilmington.

TREASURER.

M. P. Perry, M.D,, Morganton.

ORATOR.

C. O'H. Laughinghouse, M.D., Greenville.

ESSAYIST.

J. B. Powers, M.D., Wake Forest.

BOARD OF CENSORS. (Expire 1898.)

W. O. McDowell, M.D., Scotland Neck.
H. H. Harris, M.D,, Wake Forest.
Thos. E. Anderson, M.D., Stateville.

PUBLICATION.

E. C. Register, M.D., Charlotte.
R. H. Gibbon, M.D., "
R. J. Brevard, M.D., "
R. D. Jewett, M.D., Wilmington.

NECROLOGY.

R. S. Young, M.D., Concord.
R. D. Jewett, M.D., Wilmington.
K. P. Battle, M.D., Raleigh.

MINUTES

—OF THE—

FORTY-FOURTH ANNUAL MEETING

—OF THE—

Medical Society of the State of North Carolina.

FIRST DAY—MORNING SESSION.

MOREHEAD CITY, N. C., June 8, 1897.

The 44th annual meeting of the Medical Society of the State of North Carolina was convened in the Teachers Assembly Hall, Morehead City, June 8th, 1897, President P. L. Murphy, M.D., of Morganton in the chair.

The convention was called to order by Dr. Francis Duffy, of Newbern, chairman local committee of arrangements.

Prayer was offered by Rev. Mr. Massie, after which Mr. W. F. Arendell, of Morehead delivered the following

ADDRESS OF WELCOME.

Mr. Chairman, members of the Medical Society of the State of North Carolina, ladies and gentlemen: It is with great pleasure, in behalf of the Mayor and the citizens of our town, that I appear before you this morning to bid you welcome to our embryo city by the sea. It is useless to say that I hope for you not only to be profited by this session, but that you shall have thi in after years to look back to as a gala day and say to yourselves that you enjoyed it well.

You represent one of the oldest professions in the world, and, I believe, one of the greatest and noblest. Notwithstanding the fact that you do represent this, you are among the last to organize to protect yourselves against internal and external foes. You have organized and have already accomplished great

good in North Carolina. There are men in North Carolina who have had for their diplomas sheepskins for which they paid as low as $10, and there are some cities in North Carolina where men are practicing by paying the Clerk of the Supreme Court $10 and swearing that they practiced so many years ago. You cannot do any better than to protect yourselves in this manner, and I hope and pray that you will have success in your deliberations and will accomplish much good in the State of North Carolina.

We have been called the Rip Van Winkle of the United States, and especially of this part of the State it is said that we are fifty years behind the other part of the State. When I see some of the improvements made in Northern States, I thank God that we are fifty years behind, and I sometimes wish that we were one hundred.

You will find us primitive in a great many ways, but we will give you a cordial welcome. If there is any profession that has a warm place in my heart it is that of the physician, the general practitioner, the country doctor. My father was one of these. He graduated at the University of New York and practiced medicine here until he died. My uncle would have been one of your profession; so would I had my father permitted. I honor your profession. It has made for itself a history that will never die, that has always been characterized by one of the greatest virtues of the human race, and that is humility. You have gone foremost wherever danger and disease lurked, you have let the world acknowledge your ability and never claimed it for yourself. You have not only sought out ways to promote health, but you have sought out ways so that death might be easier when it did come. There is a legend that death was at one time so that it could not come into the world and that your profession was the first to find it. It is said that there was a German woman living in a German province who had a couple of apple trees, and the boys used to come and rob them on Saturday nights. One night there was a visitor came and knocked at the door and asked for admittance. She gave it kindly and entertained an angel unawares. In the morning the angel said to her to make any request she desired and it would be granted. She asked the angel that anybody who

would go into her apple tree should not have the power to get down. The next Saturday the boys came down and robbed the trees. When they got up she had them there, they could not get down and she would not let them down until they promised that they would not rob the trees any more. Time came on, her hair was sprinkled with gray and death came and knocked at her door. The old lady wanted to know, "Who's there"? "Death"! "I am not ready for you." "I can't help it." "Death, won't you please go out and get in the apple tree and wait till I get ready and get my hair fixed"? "Oh yes, madame." So he went up the apple tree and could not get down, and there was no death. Men sought to be killed in war and by poison, but there was no death. They searched for death everywhere, and finally a medical practitioner found Death and tried to put him down. Notice was sent to the King, and the old lady said she would never permit death to come down from that apple tree, that she was perfectly willing for him to go to anyone else, but she wanted him to keep his hands off of her. So death came down from the tree, and that is why he is in the world to-day.

History tells us that Napoleon in Egypt, after capturing the people to keep them from fighting, he sent for his surgeon and said: "I want you to poison these men." I can see the grand look in his face as he said: "Sire, my mission is to cure and not to kill," and he would not kill them. Napoleon took the men and shot every one of them, and that was the beginning of his own downfall.

You have always been foremost when disease came, and you doctors go to it while all other men run away as fast as they can. There are some younger members who are just starting out, but most of you are older men. I want to say to the young men that it has been said if you look at the stars you will fall in the ditch; but let me say you will never get any higher than you aim, and no man should start without an ideal. I do not care what it may be, it will crumble and decay in your hands, you will find, unless you take one ideal, and that is the Great Physician, Christ Himself. Take Him for your pattern, and you may go on and add perfection to perfection to your qualifications, never reaching, but becoming more like Him.

Now, again, Mr. Chairman, in behalf of our people, I bid you a cordial welcome to our town.

Dr. H. A. Royster made the following

RESPONSE TO THE ADDRESS OF WELCOME.

I have always cherished a pardonable pride in wishing to be thought well of by my friends. I am going to do something this morning, which will, I think, make me extremely popular, for the time, that is, I am going to make a short speech. Worthier lips than mine might have been chosen to frame a reply to the very warm welcome we have received. While I acknowledge that there are several things I can do, I must just as cheerfully confess that there are several I cannot do—one of which is speech-making. I will not mention those things I can do for fear of wearying you.

General Grant used to say that there were only two tunes he knew—one was Yankee Doodle, the other wasn't. I hope, at any rate, that on this occasion I may be spared the fate of a certain Philadelphia politician who went to Chicago to deliver an after-dinner speech. He talked about an hour, and on returning home and being asked by his wife as to his night's success, said: "I did very well, so well that when I sat down they told me it was the best thing I ever did."

But I assure you, my friends of Morehead, that, however feeble these mere words of mine may be, we all feel welcome. If there is any lack of enthusiasm in this response you may lay it to the diffidence of the one who addresses you—one of the youngest members of the Society, both in years and experience. This might have been averted had some older Fellow been selected in my stead. We are, indeed, glad to be here. It is a pleasure to us to come together for the first time at Morehead City, the delightful seaside resort of our State, and the place where so many notable gatherings of our people are held. Everything is favorable for a pleasant, as well as a profitable, meeting. If we indulge more in fishing, sailing and eating, than in dry, musty discussions of medical theories, it will be because the allurements here prove too much for our human souls. My friend, Dr. Blacknall, will be responsible.

Allow me to say that we gratefully appreciate the warm welcome extended through your worthy representative, and we shall try to show it by enjoying to the fullest your bountiful hospitality.

The Society was then called to order for transaction of business by President Murphy.

The roll was called by the Secretary. Members present will be indicated in alphabetical list of members.

The next order of business was the

PRESIDENT'S ADDRESS.

Gentlemen of the Medical Society of the State of North Carolina:

It was with many misgivings and fears that I accepted the office of President of your body, composed as it is of eminent and learned men. The responsibilities would have been felt too great had I not known how lenient you would be to any shortcomings on my part and how willingly each and all of you would extend any help I might need.

I must ask your aid in conducting this meeting which I trust will prove pleasant and profitable to us all.

It has been customary for some years that your President draw attention to anything amiss in Society affairs or with the profession and its concerns throughout the State, that he point out what he conceives to be the best interests of this body and its members.

Following this precedent I shall leave to your wisdom the use of such remedies as may suggest themselves or the adoption of such resolutions as the conditions may demand. The only matter I have been called upon to decide was a disagreement among the members of the committee on Publication—the majority claiming the right to publish the transactions of the Society in a manner different from that desired by the minority. The minority, with the Secretary held that the N. C. Medical Journal as the organ of the Society should print the transactions as has been done heretofore.

The constitution does not define the duties of this Committee, merely saying the Secretary shall place the proceedings of the

Society in the hands of the Publication Committee within thirty days after the adjournment of the Society.

The Journal is the official organ of the Society; but whether its Editor had the exclusive control of the transactions or whether, as the majority of the committee claimed, the exclusive rights of publication pertain only to the papers read before the Society is a question for you to decide. It is a matter of importance and should have your attention.

I have a communication from the Medical Society of Bernalillo county New Mexico asking our cooperation with the American Climatological Association in obtaining tabulated statements of the U. S. Weather Bureau data with reference to their bearing on the the treatment of disease. In view of the fact that North Carolina has so many health resorts, due in great measure to its climate, it might be wise for the Society to give its aid in this matter. I append the communication to this address for the use of such as may take an interest in the question.

HISTORY OF THE SOCIETY

In reading over the addresses of my distinguished predecessors, I was profoundly impressed by the one delivered at Concord in 1885 by the late Dr. Thomas F. Wood. It is a paper showing great research and much learning. I commend it to those of you, who have never read it, or did not hear it and I assure its readers that it is well worth a reperusal. I copy a foot note from this address as giving an interesting item of history known, I venture to say, to but a limited number of your body.

"The earliest notice of a Medical Society in North Carolina" says the note, "is that mentioned in the *Medical Repository*, of New York Vol. 4. page 202, A. D. 1800. It is possible that the Society had an existence for some time prior. A mention is made of it in Joseph Pignatius, a rare book."

I quote further from the body of the address. "For eighty-two years, with probably a short interval, there has been an organized effort in some degree of activity among our medical men. Most of their literary work has perished with the newspapers to which they were contributed; but the influence of that work still lives, still urges us on to more valuable acquire-

ments." It has been said of North Carolinians, and in fact it may be said of the whole South, that they make history but their sons do not write it.

It is well worthy of remark that the information that there was a Medical Society in this State in the last Century should come from a publication in another State. Our Society has been the pioneer in much medical reform, her members have accomplished some splendid work, the memory of which will soon perish forever unless the solemn duty imposed on you as a body of representative medical men to preserve and perpetuate the deeds of our departed great men be fittingly and fully discharged. I urge that this sacred task be no longer delayed.

Those who are not proud of their ancestry will never do any thing to make their descendants proud of them.

The papers written by the men to whom I refer are scattered through old Society transactions and forgotten Medical Journals, and in some instances, it seems in newspapers. Even the fact of the death of some of the most distinguished among them has escaped mention by the Committee on Necrology. We of the younger generation are reaping the fruits of their labors. Can we do less than preserve their memories in a history of this Society and its great men?

I see before me men grown grey in their great calling, men who have done deeds worthy of heroes, not only upon the battlefield and amid pestilence and at the bed side but in recording their experience in many well written papers. Soon these too will pass away and with them much of the recollection of the grand achievements of our dead brethren.

To do well this work will require great labor, time and pains; but I am sure we have men competent to do the required work well and who will make this a labor of love. Let us at the least gather together all the records we have and preserve them in some less perishable form than they now exist. There are I believe, only two complete sets of our transactions now extant. Not even in our State Library can one be found.

BOARD OF HEALTH.

This great reform to which the late Dr. Thomas F. Wood devoted so much of his time as well as his private means con-

tinues to advance. The yearly health conferences have a ten dency to interest the general public in a subject, which concerns them much more nearly than it does us. It may be well questioned how far we as medical men are to go in preventing disease from the treatment of which we gain our daily bread. The public takes our gratuitous labor as a matter of course while forgetting that we are working for their good alone.

Already in Paris the revenues of the profession have been materially lessened by the improved sanitation brought about by the physicians.

The public are scarcely interested in this work for them and look on it as some fad of the doctors whereby they receive the profit and the glory. I grant the glory, but not the profit. Shall we continue this labor received so ungratefully and apathetically? Perhaps we owe society that much and will continue as we have begun, but there is a limit even to a doctor's temper and labor. The Board of Health during the past year took a new departure which cannot fail to be of the greatest benefit if properly encouraged and persisted in.

They have addressed themselves to the study of the defective classes of the State. There is no field of labor more worthy of attention from the physician and the Legislator.

North Carolina in 1890 with a total population of one million seven hundred thousand had 1725 insane, 3617 feeble minded, 1107 deaf and dumb, 1592 blind.

Of habitual criminals in our State there is no reliable record, but the number is large. For the care of the insane the yearly expenditure is nearly $225,000 not including that spent by counties in poor houses and jails, for the deaf and dumb and blind nearly $125,000, while for the care of the feeble minded there is no appropriation whatever by the State, yet we all know large sums are required for their maintainance constituting as they do a serious drain upon our resources and diminishing thereby the wealth of the community. It is possible that by proper Legislation and knowledge, insanity, idiocy, deaf mutism and blindness may be in some measure prevented thus saving untold suffering and much money.

It is well known that alcoholism and the use of other narcotics by the parent is a large factor in producing insanity and

idiocy in the offspring. Perhaps 4 per cent. for each class arising from these causes is not too high an estimate. I have no statistics with reference to the production of criminals from these causes, but from my general knowledge of the subject I think the percentage as high as in the cases before mentioned. Much may be done by the Board on the lines mapped out by them in regard to this subject.

CONSANGUINEOUS AND OTHER MARRIAGES.

The profession has discussed at one time or other the results of consanguineous marriage. At the State Hospital at Morganton careful collation has been made of the statistics relating to this interesting subject with the result of showing that insanity and idiocy do not come from this source. Other observers confirm this. Perfectly healthy cousins are as likely to have healthy children as perfectly healthy persons who are not akin. As there are, however, but few healthy families, it is safer to discourage these marriages. There is a deep public prejudice against such unions, and my observation has been that such prejudices are generally well founded.

The marriage of defectives is to be strenuously and systematically discouraged, if we at all consider the welfare of the coming generations who are to preserve our civilization and manhood. Unfortunately for our work in this field, it is a well known fact that persons of nervous disposition attract each other. A careful search of all sources of information regarding the causes of insanity at the Morganton Hospital show that not less than 50 per cent. of the patients have insane ancestors, either direct or collateral.

In North Carolina, where there is comparatively little immigration, a rich and easily worked field is accessible for investigation on this subject, which affects so vitally the future manhood of the State. The children of drunkards, of imbeciles, of those with insane tendencies, of epileptics, of criminals, fill our charitable institutions and prisons.

In a recent paper read by Sir Frederick Bateman, M.D., before the Medico-Legal Society, on "Factors in the Genesis of Nerve Disease and Degeneration of the Race," I draw much

material on this subject. I shall quote largely from that paper.

EDUCATIONAL OVER-PRESSURE.

This is a well-worn theme, and yet results are so disastrous that its lessons cannot be too often repeated or too strongly urged. It is a common sight in our hospitals for the insane to see young people there from this cause. At the Morganton Hospital there are two from the same school. I am afraid the fact is overlooked that physical health is a necessity to obtain an education; certainly the system of cramming—in vogue in some places—is ruinous to the weak and unstable brain.

THE NEW WOMAN.

"I am quite aware," says Sir Frederick Bateman, "that I am treading on dangerous and delicate ground, but although I would not discourage the highest aspiration of women, whether of an intellectual, social or æsthetic character, I must think a word of caution is necessary against over-pressure of the present day." "As soon," says Dr. Seguin, "as women assumed the anxieties pertaining to both sexes, they gave birth to children whose like had hardly been met with thirty years ago."

"Sir J. C. Brown, in his oration on "Sex in Education," says: "To throw women in competition with men, is to insure to them a largely increased liberality to organic nervous disease. Woe betide the generation that springs from mothers among whom gross nervous degeneration abounds." He claims that there are organic cerebral differences between men and women, and that they ought to be educated in different ways, being destined to play different parts in the sphere of life.

"There can be no question of superiority or inferiority," says he, "any more than there can be between a telescope and a microscope; but they are differentiated from each other in structure and function, and fitted to do different kinds of work in the world." He maintains that the weight of the brain is less in women than in men, that the specific gravity of the

grey matter is less, that the distribution of the blood varies in the two sexes to a considerable extent, and that the blood going to the female brain is somewhat poorer in quality than that going to the male brain, and contains four millions and a half corpuscles to the cubic millimetre, instead of five millions, in the case of the male.

Another authority asserts that the cerebellum in women is relatively larger than in men, as compared with the cerebrum.

Mrs. Garrett Anderson and others controvert these opinions of Sir J. C. Brown. She says: "All I would venture to say is, that if it could be proved that an average man differs from an average woman as much as Newton from a Cretin, it would still be well to give the Cretin all the training which he was capable of receiving. . . . When we hear it said that women will cease to be womanly if they enter professions or occasionally vote in parliamentary elections, we think that those who conjure up these terrors should try to understand women better, and should rid themselves of the habit of being frightened about nothing."

It seems that one of her own sex is of a different opinion to Mrs. Anderson, as in a series of articles in the "Nineteenth Century" for 1891 and 1892, Mrs. Lynn Linton strongly deprecates any departure from the comparatively restricted area of usefulness hitherto open to women, and she even boldly states that it is for maternity that women primarily exist. She also adds: "Be it pleasant or unpleasant, it is none the less an absolute truth—the *raison d'etre* of woman is maternity— . . . the cradle lies across the door of the polling booth and bars the way to the Senate."

The venerable Phœbe Cozzens, after years of advocacy of female suffrage, changed her opinion upon maturer deliberation, and thought that the care of children was, after all, the proper sphere of woman.

It is not for a moment to be considered that I would in any way deprive women of the highest education and advancement; on the other hand, I believe that the proper education of the present generation of women means greater advances in the next. It is only against educational overpressure that I would

warn them and against unwomanly professions. Nothing can be more certain that mothers cannot practice law or medicine or take active parts in affairs of State and at the same time perform well the functions of wife and mother.

THE HABITUAL CRIMINAL.

Every Criminologist recognizes that there is a distinct criminal class who is absolutely hopeless so far as any reformation is concerned. Let any one view a body of convicts and mark the asymmetrical heads, deformed features, the weak bodies, and limbs, and the varions stigmata of degeneration and he will be convinced that no reformatory can ever work any good to them and that there is nothing for society to do but prevent their reproduction if possible, and to protect itself against their depredations by confining them in prison.

Except for the limited work done by the Board of Charity hampered as it is by the lack of funds for any investigation, criminology so far as my knowledge goes, is an untrodden field in North Carolina and our Legislators have never recognized these facts by any official action. The Board of Health, the Board of Charity and you gentlemen of the medical profession, must move if there is anything done to protect society from these various evils which threaten its existance. What course must be taken is yet an open question. Legislators look to us for light and we cannot do better than to study these vast and important questions. Asylum and prison physicians can do much, but you must give them your moral support. Last winter a bill was introduced into the Legislature of one of the western States not only permitting but commanding the asexualization of certain feeble minded, epileptics and criminals. This course has been strongly advocated by various authorities. Without endorsing this, all of us will agree that it would be effectual so far as stopping the reproduction of these classes. It may be said that the same result may be had by sequestration. I again repeat that if any reforms on these lines ever come about it must be under your leadership. Up to now our State has been satisfied with the feeping, housing and clothing and caring for her insane and criminals because of lack of means.

If any united effort on your part is made, soon we will see educated pathologist and criminologist in every hospital and prison using the rich material now going to waste. It is to the pathological chemical laboratories the clinician looks for help. Already our sister States are moving in this direction. Shall we prove laggards in the race for greater happiness and greater advances? From us the people expect aid in such matters, let us not be called on in vain.

THE BOARD OF MEDICAL EXAMINERS.

This Board is giving renewed interest in work and is not only holding up the standard heretofore set, but making judicious and substantial progress.

The Committee on legislation did good work last winter and should be continued. The thanks of this Society and every citizen of the State is due our confrere, Dr. Abner Alexander a member of this committee also the member of the House of Representatives from Tyrrell county. No member of the House could raise his voice against our noble profession and our salutary medical and health laws without a prompt and effective reply from our loyal and competent brother member.

This Society, we are proud to think, has done much for our State and generation, there is much yet to be done and unless we progress, soon we will begin to go backwards; we cannot stand still, we must move foward or we will be mere cumberers of the ground and would richly deserve to be swept into oblivion as we assuredly would be.

In conclusion gentlemen, I want to thank you for the greatest honor ever conferred or can be conferred on me. I am fully aware of my inability to fully discharge my obligation, I can only say, I have done my best.

It was moved by Dr. Long that the exceedingly well digested and valuable address be referred to a committee of three.

The following committees were appointed:

Committee on Credentials—R. H. Speight, W. E. Headen, J. L. Nicholson.

Committee on Finance—A. J. Crowell, C. M. Poole, F. H. Holmes.

Dr. G. T. Sikes read a paper on Law vs. Justice.

Dr. Lewis stated in regard to the tax upon the physicians that our friend, Dr. Alexander, when the Revenue Bill was before the House, succeeded in having the section stricken out and inserted in place of it a tax of $100 in each county upon spectacle peddlers. When it went to the Senate it struck out the section as it came from the House and re-inserted the tax on professional men, diminishing it one-half, and it is now $5.00 instead of $10.00.

Dr. J. W. White, chairman of Section on Microscopy and Pathology, read a report of his Section, which was discussed by Drs. Massie, Poole, Duffy and O'Hagan.

On motion, Dr. White's paper was referred to the Committee on Publication.

Dr. E. C. Register read a paper on The Specific Action of Quinine in Malaria. Discussed by Drs. Sikes, Royster, Crowell, O'Hagan, Burroughs, Flippin, Duffy and Robinson.

Dr. Lewis, for the committee appointed to have prepared blank certificates for registration in the various counties, reported the work accomplished, and presented a copy of the certificate. He asked what disposition was to be made of these, and, on motion, he was instructed to send them to the clerks of Superior Court in the various counties, the Treasurer to pay the carriage charges.

On motion, the Society adjourned to meet at 3: 30 o'clock.

AFTERNOON SESSION.

The Society was called to order by the President.

The members being invited to participate in a sail, it was moved that the Society adjourn. The motion prevailed, and the Society adjourned to meet at 8: 30 o'clock.

EVENING SESSION.

The Society was called to order by the President.

Dr. T. S. McMullan, chairman of Section on Physiology and Chemistry, read a paper entitled The Keystone of the Medical Arts. On motion, it was referred to the Committee on Publication with thanks.

Dr. E. G. Goodman presented a paper on The Ideal Antipyretic. Moved and carried that the paper be referred, with thanks, to the Committee on Publication.

Next on the programme was a paper by Dr. Albert Anderson, entitled Antitoxin in the Treatment of Diphtheria.

Dr. J. M. Flippin opened the Annual Discussion by reading a paper entitled Diphteria Antitoxin. The discussion was participated in by Drs. Anderson, Robinson and Poole.

Dr. R. D. Jewett, in the absence of Dr. Young, presented the report of the Obituary Committee.

On motion, the report was adopted.

The Society then adjourned to meet to-morrow morning at 9:30 o'clock.

SECOND DAY—MORNING SESSION.

The Society was called to order by the President.

The Finance Committee presented the following report, which was adopted:

Your Committee on Finance, having examined the books and accounts of the Treasurer, beg leave to report the following:

Balance on hand 12th May, 1896	$365 59
Amount collected	757 00
Expended as per vouchers, etc	826 24
Balance on hand	296 35

We recommend the usual assessment of $2.00 per capita; that the salary of the Secretary be $125, and that of the Treasurer $100 for the ensuing year.

C. M. POOLE,
F. H. HOLMES,
A. J. CROWELL,
Committee on Finance.

The President appointed the following Nominating Committee: Drs. H. H. Harris, Willis Alston, J. A. Stevens, C. H. Lewis and W. H. Nicholson.

A paper on The Microscope in the Diagnosis of Malaria was read by Dr. R. H. Whitehead. Discussed by Drs. Hines and Anderson.

A motion was adopted that the papers on Surgery be read and discussed at once, as it would save time.

Dr. John C. Rodman, chairman of Section on Surgery, read a paper entitled When to Operate.

Dr. A. J. Crowell presented a paper on An Interesting Case of Appendicitis.

Dr. James M. Parrott read a paper on The Surgical Treatment of Hemorrhoids.

Dr. W. L. Robinson, of Danville, read by invitation an interesting paper on a new treatment for cancer of the uterus.

The discussion on surgery was participated in by Drs. Hines, Weaver, Hodges, O'Hagan, Massie and others.

The special hour having arrived, the Conjoint Session of the Board of Health was called to order by Dr. G. G. Thomas, President of the Board.

The reports of the President and Secretary were made, and, on motion, adopted.

Adjourned to meet at 3 :00 o'clock.

AFTERNOON SESSION.

The Society was called to order by the President.

The Committee on Nominations offered the following report, which was adopted.

Orator—Albert Anderson, Wilson
Essayist—H. A. Royster, Raleigh.
Leader of Debate—J. A. Burroughs, Asheville.
Board of Censors—W. O. McDowell, H. H. Harris, J. H. Tucker.
Publication Committee—R. J. Brevard, E. C. Register, R. D. Jewett, G. G. Thomas.
Legislation—R. H. Lewis, G. T. Sikes, Abner Alexander, James McKee, L. G. Picôt.
Duffy Prize—John Whitehead, W. P. Beal, Oscar McMullen.
Obituary—G. W. Long, J. A. Regan, Kemp P. Battle.
American Public Health Association—W. J. Lumsden, Chas. Duffy, H. T. Bahnson.
North Carolina Pharmaceutical Association—J. W. McGee, Jr., J. R. Wheeless, J. M. Flippin.
Delegates to American Medical Association—J. H. Tucker, C. J. O'Hagan, Frank Duffy, Willis Alston, J. W. Long, H. T.

Bahnson, S. W. Battle, J. W. McNeil, P. E. Hines, E. C. Laird.

Delegates to the South Carolina Medical Association—C. M. Poole, W. A. Graham, W. T. Pate, W. D. McMillan, J. P. Monroe, J. B. Shamberger, J. R. Schenk.

Delegates to the Virginia Medical Association—W. T. Cheatham, F. H. Holmes, Oscar McMullen, G. A. Foote, J. M. Boyette, T. L. Booth.

Delegates to the Southern Surgical and Gynecological Association—W. H. Whitehead, D. A. Stanton, A. W. Knox, H. S. Lott.

Delegate to the International Medical Congress at Moscow—Dr. Anna M. Gove

H. H. Harris,
Willis Alston,
C. H. Lewis,
W. H. Nicholson,
J. A. Stevens.
Committee.

The Committee on President's Address made the following report: We find that at the meeting of the Society in Charlotte, in 1887, that it adopted the following resolution, to wit: "That the North Carolina Medical Journal be declared the official organ of the Society, and that its editors be ex-officio members of the Committee on Publication." Our opinion of this resolution, however, is that it does not give the organ the exclusive right to print the volumes of transactions unless terms satisfactoty can be agreed on with the Committee on Publication. We recommend further that the President appoint a committee composed of Dr. W. J. Jones, chairman; Dr. Richard H. Dillard, Dr. Hubert Royster, Dr. Wm. A. Graham, Dr. C. M. Poole and Dr. W. O. McDowell, to be styled the Historical Committee of the North Carolina Medical Society, whose duty it shall be to collect data bearing upon the lives and labors of the State's worthy physicians, in order that their distinguished services may not be lost to posterity. We further recommend that the Legislative Committee call the attention of our Legislature to the great burden imposed upon our State in the form of insanity and criminals by the intermarriage of idiots, and we further suggest, as a suitable and safe remedy, that the State erect a comfortable home for this unfortunate class of humanity, thus preventing the transmission of their misfortune to posterity.

On motion, the report was adopted.

The hour for the election of officers having arrived, the name of Dr. Francis Duffy was put in nomination for President. On

motion, the Secretary was instructed to cast the vote of the Society for Dr. Duffy.

The following Vice-Presidents were nominated: E. C. Register, 1st; J. B. H. Knight, 2d; A. T. Cotten, 3d; F. H. Russell, 4th; and, on motion, the Secretary was instructed to cast the vote of the Society for them.

Nominations for Secretary being in order, Dr. R. D. Jewett was nominated, and the Treasurer was instructed to cast the vote of the Society for him.

Dr. M. P. Perry was nominated for Treasurer, and there being no further nominations, the Secretary cast the vote of the Society, and he was declared elected.

EVENING SESSION.

The Society was called to order at 8:30 o'clock.

The Committee on President's Address desired to amend the report on President's Message, by adding the names of Drs. W. O. McDowell, of Scotland Neck, and W. J. Jones, of Goldsboro, the latter as chairman, and further recommended that this Committee be allowed stationary and postage stamps. The amendment was carried.

The Annual Oration was delivered by Dr. Charles J. O'H. Laughinghouse, on A Few Hints on Medico-Social Ethics.

Moved that the Oration of Dr. Laughinghouse be referred to the Committee on Pnblication with the earnest thanks of the Society.

Moved that, because of the absence of J. B. Powers, the Annual Essay be read by title and referred to the Committee on Publication. Motion carried.

On motion, the Society adjourned to meet next morning at 9:30 o'clock.

THIRD DAY—MORNING SESSION.

The Society was called to order by the President.

Dr. H. A. Royster read a paper on Practical Results in the Diagnosis of Continued Fevers from Examination of the Blood.

Discussed by Drs. Duffy, Parrott, Murphy, Booth, Crowell and Hayes.

Dr. J. B. H. Knight presented a paper on A New Treatment of Hydrophobia—Report of a Case—Recovery. Discussed by Drs. Hayes and O'Hagan.

Dr. Montgomery not being present, on motion, his paper on Modern Obstetrics was read by title and referred to the Committee on Publication.

Dr. J. Steven Brown and Dr. Annie L. Alexander not being present, it was moved and carried that their papers be read by title and referred to the Committee on Publication.

The Board of Censors made the following reply to the question asked in the morning session.

The following question has been submitted for answer to the Board of Censors: "Is it a violation of membership to dispense a private formula to the general public through druggists and others, the formula printed on package?"

In reply the Board of Censors decide that, if the exact formula and character of cases in which it has been found useful be published on each package, such a case, not being in conflict with the Code of Ethics of the American Medical Association nor the Code of Ethics of the North Carolina Medical Society, is not in violation of the Constitution of the North Carolina Medical Society.

(Signed) W. O. McDowell,
H. H. Harris,
J. H. Tucker.
Board Censors.

The only thing in the case we can find bearing upon the subject is found in Article I., Section 5.

With regard to this decision, the gentleman is a physician so far as the work of the practice of medicine goes, but he has not practiced medicine for a series of years. During the period in which he was practicing medicine he prepared this formula. He had the medicine prepared and sold it through a druggist. He now has a call from customers who desire this combination. He desires also to make himself a member of the Medical Society of North Carolina. He cannot do so until this question is decided. The Board has done the best that it can.

It was moved that the report be adopted.

Dr. Haigh: Does the gentleman propose to sell this medicine? (Answered yes.) Then "Cæsar's wife should be above suspicion."

Dr. Duffy: If I understand the matter, he is to give the entire formula and also place upon each package the cases for which he has found this particular combination useful. It is done to supply a trade which was built up several years ago. He does not propose to use it, but to give it as anybody would give a contribution to the profession. I think he is above suspicion.

Dr. Jones: It seems to me that it is the most valuable advertising I know of. The man puts a label as long as your arm on the bottle, and tells that this medicine is good for all cases of dysmenorrhea, leucorrhea, hemorrhoids, croup, or something of that kind, and after a while he will have a list of the remedies. Isn't that advertising? It is in bold relief on every package. You condemn a man for using secret nostrums, but this is worse than that, and while it may be that the Constitution of the Medical Society does not directly contravene this thing, it is a violation, it seems to me.

Dr. Weaver: It seems, sir, in the language of Dr. Jones, that this is the highest species of advertising. It is equal in every respect to Wampole's Cod Liver Oil and Parke, Davis & Co's Pinus Canadensis. Without further remarks, I shall submit Section 4 of Article I. of the Code of Ethics. If that does not complete the case, I can't read between the lines, and I for one oppose the report of the Board of Censors.

Dr. McDowell: I want the Society to understand that the Board of Censors, in making this report, have not endeavored in any way to commit themselves as favorable to public advertising by public formula. It was simply a question of whether or not this was a violation of the Constitution of the North Carolina Medical Society, and does it or does it not debar a man from membership? It seems to me that legally it cannot do it. There is not a man in this house to-day that does not use canadensis in his practice, or Fellows Hypophosphites, or some of the hundreds of other compounds of that kind. Preparations gotten up with an exclusive formula are used by every man in this Society to-day. I do not advocate it. Never would

I do such a thing. When it comes to be a mere matter of dollars and cents in a thing like that, I shall simply withdraw my name from the Medical Society of North Carolina. I do not advocate it at all, gentlemen of the Society, but how under the letter of the law we can avoid allowing this, I cannot see. If Cæsar's wife is above suspicion, why is she carrying on this?

Dr. Jones: It seems to me that there is a very broad suspicion between manufacturing chemists and practicing physicians. We admit that we have used the proprietary remedies, as they are great auxiliaries and helpers, and, gentlemen, we also admit that they have been a great snare to our feet. If you open the gate now, no telling how many will get in. We get careless, and don't do as we should. You all know that is true. A man says, "I will make a prescription and put a label on it as long as my arm and let it go." That is veritable advertising. With all respect to the action taken by the Board, I think the sense of this Society is not to accept the report.

Dr. O'Hagan: Suppose Mr. McArthur would come and ask to be a member, would he be received?

Dr. Jewett: I offer as a substitute for the report the following resolution:

Resolved, That it is inconsistent with membership in the Medical Society of the State of North Carolina to be interested, directly or indirectly, in the sale to the laity of any preparation where the laity are expected to diagnose the diseases for which the remedy is recommended.

Dr. Haigh: My little remark was criticized, and, though I must hold back that we do use these remedies, I am above suspicion in regard to patent medicines. I never use McArthur's Hypophosphites; I never use Fellows Hypophosphites; I never use antikamnia, which I reckon very few men in this country or in Europe can say, though I know what antikamnia is. I have my hypophosphites prepared in Fayetteville, and I try to have my own prescriptions compounded, so that I am invulnerable on that point. But I do feel this, that it is no argument to say that because we are not doing our duty, that therefore we ought to take into our Society a man who is not doing his before he comes in. We do not want any more black sheep in.

On motion, the substitute was unanimously adopted.

Communications were read by the Secretary from Drs. J. H. Way, R. H. Winbourne and J. B. Powers.

Moved by Dr. Hodges that the Secretary be instructed to send the greetings of the Society to Dr. Winbourne.

On motion, the Society proceeded with the installation of officers.

Drs. O'Hagan and Hodges were appointed to escort the new President to the Chair.

Dr. Murphy said: Gentlemen, I present to you my worthy successsor. I hope you will be as lenient and kind to him as you have been to me. I thank you sincerely for the help you have given me, for this is the first meeting I have ever presided over.

In reply Dr. Duffy said: Gentlemen of the Society, I must say that it is with considerable diffidence that I accept this trust which you have done me the honor to place in my hands. I feel that I am very little acquainted with parliamentary usage, and so likely to be embarrassed in these respects in presiding over this body, that I must ask your indulgence; yet I know I am in the house of my friends, and I do not expect any harsh criticisms. I shall promise to do my best, and that is all I can do. Again I thank you for the honor.

The President announced the following Chairmen of Sections:

Pathology and Microscopy—Dr. W. T. Pate.
Practice of Medicine—Dr. M. H. Fletcher.
Anatomy and Surgery—Dr. J. M. Parrott.
Materia Medica and Therapeutics—Dr. A. J. Crowell.
Medical Jurisprudence and State Medicine—Dr. J. S. Brown.
Obstetrics—Dr. W. G. Stafford.
Chemistry and Physiology—Dr. J. G. Blount.
Gynecology—Dr. R. S. Primrose.

Moved and seconded that a vote of thanks be tendered the people of Morehead City and the Proprietor of the Atlantic Hotel, Dr. Blacknall, for the kindness and hospitality to the members of the Society. The motion was carried.

The following were favorably reported by the Committee on Credentials:

Dr. F. M. Clarke, Beaufort; Dr. H. S. Baird, Asheville; Dr. R. S. Primrose, Newbern; Dr. Clara E. Jones, Goldsboro;

Dr. G. A. Coggeshall, Oxford; Dr. Charles J. Sawyer, Belcross; Dr. E. A. Moye, Greenville; Dr. B. K. Hayes, Oxford; Dr. J. W. Duguid, Dover; Dr. J. H. Pool, South Mills; Dr. Thomas F. Costner, Lincolnton.

On motion, the Society adjourned to meet in Charlotte next May.

ANNUAL ORATION.

A FEW HINTS IN MEDICO-SOCIAL ETHICS.

By Chas. O'Hagan Laughinghouse, M.D., Greenville, N. C.

Ladies and Gentlemen:

IT is my pleasant duty, first of all to thank this Society for the honor conferred in selecting me their annual orator. Like all honors it has to be dearly paid for. The busy life of a practitioner leaves little time for speech making, that belongs to another craft; and when we would assay to climb the dizzy heights where the silver tongued orator walks serene, it means that the mountain must first be in labor, and it often brings forth nothing but a mouse. I realize deeply the responsibility, the opportunity and the limitations of this occasion; and while the gentle breezes from Morehead, "nature's greatest sanitarium", kiss your cheek, and drive away all anxious care, I shall attempt to present, neither a learned oration nor a technical address.

It is my purpose to be entirely practical, and lay before the laity as well as the profession, a few hints on medico-social ethics.

My reason for selecting such a subject, is due to the fact, that the medical profession and the laity, have many interests in common, which on account of silence on the physician's part, and a consequent lack of information among the laity, are being sorely neglected.

Since the day when I first realized what it was to be a member of the medical profession, I have longed to witness a time when the profession and the general public should join hands in an ethical compact that would result in a further advancement of practical medical science, thereby advancing humanity as a whole. There are many glaring faults we might correct could we but catch the public ear.

That day has passed when medicine was considered so full of

mysticism and superstition that no one outside the profession could realize and understand its practical application. That it is a science is no longer the mooted question of even a few years ago. The persevering research of medical men have made diagnosis and treatment of disease so exact that there are but few who deny the scientific aspect medicine has acquired, and that it is still advancing with great rapidity cannot be denied.

Take the best work on Pathology, General Medicine, Surgery or Therapeutics written ten years ago and compare them with authorities of to-day and one is astonished to see how much is old and seemingly outgrown. The stupendous discoveries and advances made from day to day cause medical books of 1890 to seem like history rather than present day conclusions.

No other branch of science has advanced so rapidly and under so many difficulties as medicine. No new scientific fad has aroused such great hopes and none has so superbly gratified some of them as that of the disease producing influence of minute organisms, called bacteria. Their influence as causes of disease is now established beyond controversy and to this discovery is due the revolutionizing of surgery, the extinction of surgical and puerperal fever and the prevention of contagious diseases by serum therapy. Every department of medicine has been electrified by the partial success and perfect promises which this discovery holds out to mankind. In the same, though perhaps in a less striking way, a noteworthy advance has been made all along the line. There is now no subject of medical study that does not bear witness to the spirit of accurate and exhaustive research which characterizes our age.

Simply to enumerate the glowing incidents of advance would require a volume, the brightest and most blessed pages of which would be those dedicated to Preventive Medicine.

The physicians of the world, as a body, are laboring for the public good with a zeal and an intelligence combined with an unselfishness which no other profession, occupation, trade or calling can even hope to rival.

Humanity at large could study with much profit the etiquette and advance of medicine. When they realize that medical men are tirelessly seeking by hygiene and preventive medicine to

render their own calling useless and superfluous and themselves occupationless; when they realize that all over the world every true physician, whenever asked, gives his services to the poor without demand or thought or even hope of compensation; when they realize that it is a medical tradition that the disciples of this profession must gladly renounce the usual ideals and commercial methods and devote themselves to the Healing Art imbued with the determination to follow it for the good of humanity more than for the good of themselves, when they realize that the entire tremendous labor for the benefit of the poor of keeping up the enormous hospital work of all the great cities is borne by physicians without a cent of pay, when these things are realized, I say, the public will appreciate more thoroughly than they now do, the great usefulness and self-sacrifice of medical men. Then the ignorant misconception, the non-recognition of an opposition to the true work and worth of of modern medical science will be superseded by a new order of things that cannot fail to place the medical profession in the front ranks of those who toil to bless their fellow man.

The public will aid us when we teach them why they should and how they can assist in correcting many evils that are stalking about doing damage to our land to-day. For example; the hygiene of female schools. Boys schools are bad enough, but they suffer so much *less* that they can go on unmolested until we can succeed in doing something for their sisters.

How many of you are there who have seen young girls strong, well and healthy leave home for college and come back weak, nervous, chlorotic, in fact, wrecked in body and in mind to such an extent that they can never again recover all that has been lost. Is it from hard study? No, it is from injudicious study, improper management in ways that I cannot mention here because it is a text for a volume.

What are we to do about this? The very look of these poor children is an appealing call to every thinking man and woman urging that something be done to correct the criminal neglect of the physical well being of these innocent souls who are to be the women, wives and mothers of the future. They are carefully taught and the most stupid learn the small social laws and the criminaltyi of violating them. Is it more important to know

these things than to understand and appreciate the simple commandments which, if carefully practiced, lead to health and to a respective increase of happiness and prosperity? Would it be unwise to have in every female school a chair of Hygiene presided over by a competent instructor, who would teach them by lectures and by example the best way to live, the practical methods of prevention of disease, the art of medical cleanliness, the utmost importance of a thoughtful marriage, that their offspring might be spared the disease of heredity? The misery this will prevent, the good it will do is not to be seen in our day but the stalwart health and the intellectuality characterizing the men and women of the future will be the monument erected to bless our wisdom.

I could point out a thousand things the public ought to know, the way one sits in reading and the way a book is held may mean years of ocular suffering. Every article of dress, especially the corset has a medical significance. Why women will wear them is beyond the pale of common sense. Every man whom they think they are pleasing is only disgusted with their wasp-like waists and thoracic breathing. Without it the profession would be much out of work, yet we will hail with delight a time when the fashion formers will have made popular the Jeannesse Miller styles which allow freedom of a woman's breathing apparatus and her body generally.

The food we eat, the way it is cooked and eaten is medically most important. Instead of teaching music and painting to every inmate of a female school, no matter whether talent is possessed or not, would it not be wiser to give some lessons in the culinary art to those whom in all probability would make better housekeepers than handlers of the pallete and brush.

Now we come to a business, patronized by the public, which is doing more harm than all the plagues, pestilence and famine which infest our country. I refer to the patent medicine fraud. My friends, it is a disgrace to the nation. It flourishes nowhere else as it does in these United States. Even semi-barbaric countries have forbidden the entrance within their borders of these vile concoctions of danger, ignorance and nausea, devised to strip the poor of money and to fill their bodies with poison.

What a ridiculous farce that any public credited with sense

enough to vote should purchase these cure-alls containing they know not and cannot know what, compounded by whom they know not, vouched for by no one, a shot gun prescription, fired at a disease in the abstract, an unknown remedy for an unknown disease prescribed by an unknown hand.

Thinking of this death dealing evil probably evoked from the great Dr. Oliver Wendel Holmes, the witticism, "if all the medicine on earth were thrown into the sea it would be good for humanity but bad for the fish."

We medical men realize that the favoring of this crime by the public is to some extent a sin of ignoranee and we pray "Father forgive them for they know not what they do." But is it not our duty to do more than pray? This a part of Preventive Medicine neglected as are a great many other sources of prevention simply because its success depends upou the public and the public has not been enlightened enough to see the necessity or know the methods of prevention.

True, the physicians can say that they have tried to protect the public from these patent medicine venders by attempts to have laws enacted against the charlatans. Laws to elevate the medical profession, thereby elevating the public generally, but the interested and combined hordes of quacks have so intimidated and bought up our measley legislators that they are too weak to vote for decency. Thus the patent medicine outrage flourishes, controls legislation, pollutes human health, poisons human bodies, while every newspaper, barn, house and fence are heralding their false and beastly advertisements, which advertisements the public read, believe and do what is asked of them, purchase.

Now what do they get in return for their cash? Some worthless, dangerous nostrum, a feeling of contempt for their blissful ignorance from the fakir or drug clerk whom they allow to persuade them into purchasing the worthless article. Is this due to stubbornness, lack of interest or ignorance on the part of the people?

When a boy I was amused at the closing remarks of a famous patent medicine vender who termed himself, Dr. Allen. After selling a goodly number of his preparations in the public square

of our town, he concluded his harangue by saying, "my friends, before bidding you good-bye, I want to say for Pitt County, that its people have more money and less sense than the inhabitants of any section of Eastern Carolina." His remarks would not be inappropriate if applied to the whole State so far as purchasing medicine is concerned.

Have we, as guardians of the public health, taken enough pains to impress upon our lay friends, the danger of allowing and encouraging this baneful patronage of patent medicine fakes. The above may also apply to the irregulars and quacks, both in the profession and out of it.

The newspapers are filled with all sorts of spurious medical advertisements bent only on getting money without knowledge, knowing nothing and caring nothing about curing. When the public sees in the papers an account of some marvelleus operation performed by some sneaking advertiser in the profession or some pompous nonsense about professional matters, they flock immediately in answer to the advertisement, forgetting that the advertiser is directly in collusion with the newspaper reporter and that his opinion upon medical questions is scientifically valueless. Strange beyond all strangeness is the love of the public generally for being duped.

Quackery may be likened to an artificial eye, everybody sees through it except the patient. Should we censure or pity, should we abuse or instruct our friends outside the profession for allowing and supporting this highway medical robbery, not of the profession but of themselves? At whose doors shall we lay the cause? The public, of course, will have to bear its part but they are to some extent excused on account of ignorance. The profession is responsible to some extent for not raising its voice more powerfully against this menace to public health; but the Press, that powerful organ for good or ill, will at the final judgment, have few sins more heinous to answer for than the crime of poisoning the minds of an unsespecting public with what they know to be absolute lies. Papers, pamphlets and magazines, almost every sheet upon which type is pressed, is to some extent responsible for the success of these social vampires.

Even the "Biblical Recorder" and "N. C. Christian Advo-

cate," official organs of the respective churches, for whose benefit they are said to be printed, are emblazoned with "Mother's Friend," "Pink Pills for Pale Peoyle," "Cascara Candy," "The Electropoise," etc. etc.

Our profession by patient unpaid toil has sounded to the bottom most of the ills of life and has succeeded in devising means for preventing many, but all the knowledge is but small profit to those for whom it was gained because they have not been taught how to put into practice the wonderful discoveries wrought for their benefit. Dr. Shastid suggested in the April number of the "Journal of the A. M. A., instructions of the laity through short concise yet clear and honest discussion of those subjects pertaining principally to Preventive Medicine believing that such a course will tend to beget among the laity more respect and veneration for, and will bring them closer to physicians. It will also add impetus to the movement toward a creation of a department of public health, a mile stone which all of us wish to see planted in our time.

The day has come when something must be done, we have struggled for centuries and have victory in our hands if we will but *act.* Shall we now in a fit of weariness, tinctured with cowardice, throw away all that we have gained? Our heads and hearts are long enough and strong enough to devise ways and means by which our ignorant lay friends will cease to be devoured on account of their ignorance.

If as a profession we did but devote a tithe of our collective energy to the task of teaching humanity that we had something good for them, if we did but possess even a small portion of the persistent, tenacious perseverance of these quacks whom we condemn so strenuously, we could efface from this great nation much of the public ignorance.

We could soon show the laity the danger to health in placing their hard earned dollars in the coffers of these human vampires. True, the medical profession is to a great extent shut within itself. It has no power, means or machinery as yet for reaching the public ear. The Press, some might suggest, would help us by a determination to print only truths so far as medical advertisements are concerned, but for the paltry pay of advertising it has sacrificed its honor, its self respect, its decency

and most harmful of all, its veracity, for with eyes wide open, it knowingly prints advertisements worthy the pen of Ananias.

The uneducated, thoughtless, undiscriminating classes are loaded with almanacs, circulars, fictitious certificates and false promises of quacks and nostrum-venders which impress the credulous, unsuspecting mind and fill it with plausible falsehoods. The family physician is put aside and his testimony against these frauds, if he has the manliness to denounce them, is attributed to his jealousy.

Heretofore the profession has scorned to take up arms against these social lepers. When we can warn against such direful evil, is it beneath our dignity to teach the ignorant?

There have been valuable suggestions made in current medical literature showing that general interest is being evoked on this subject. In several journals of late will be seen paragraphs taking the broad view that medicine should no longer be an occasionally useful mystery to the laity, but on the contrary a living, continuously applied help to a higher civilization.

There are advocates of public medical instruction, provided it is done in a proper way, paying special attention to practical methods of Preventive Medicines. Reacting, this instruction will beget greater respect for the physician in the every day affairs of life. It will make the practice easier and more successful, for, when taught how, we will find willing hearts and hands in the effort to save humanity as much as possible from all the ills which Preventive Medicine can blot out.

Dr. Shastid's remarks are the outcome of this thought. Why could we not here in North Carolina learn a bit from the business sagacity of the patent medicine manufacturers and issue medical almanacs, conservative, concise, non dogmatic, free from great detail, seriously, truthfully gotten up, yet popular and send them free to all? Let every County Medical Society have a medical bureau with the local physician as the local agent to instruct the people in sanitary medical questions. We should do all in our power to get from the State a proper appropriation for its Board of Health. Legislators believe we do not care for help, and they do not give it simply because by our inactivity we have merited such an opinion.

Verily, there are a hundred medical duties we are leaving

undone, which, if we did but do medical and sanitary progress would sweep on to certain victory. As physicians, charged with the health of the present and future, our duty must be clear.

The sly cunning of advertising schemers, the tricks and frauds of medical parasites, the patent medicine disgrace, all these must be choked out of existence. The careful instruction of the people who are so woefully ignorant, medically, could we but reach their ears, how we would love to appeal to them. To legislators of a serious, honest type, if such there be, to the better class of journalists, to literary men with an eye to the public good, to teachers and rulers of colleges, to business men, to patriots and lovers of humanity, all these we would gladly have listen while we taught them something of their health, their life and their physical culture.

In these great United States hundreds and hundreds of thousands of needless deaths are annually taking place because the people will lend no helping hand to carry out the plans of prevention which have been so well established.

My lay friends, are your charlatans and quacks founding institutions of Preventive Medicine, are they trying to probe the mystery and prevent the mockery of disease? Has it been the quacks who have cared for the sick and poor and kept going the great charity hospitals which fill our land to-day? For the sake of self-protection, for the sake of your children, for the sake of civilization and humanity, for God's sake, let us turn away from the foolishness and folly of such trifling and enter at last upon the road, removing every obstacle that leads to health.

REPORT ON PATHOLOGY AND MICROSCOPY.*

By J. W. White, M.D., Chairman, Wilkesboro, N. C.

Mr. President and Gentlemen of the Society:

IN the preparation of this report on the Section "Pathology and Microscopy," I have endeavored to collect and compile from the writings of leading authorities on this subject, such reports as will be of greatest interest to us as physicians.

The laborers in this field of our work have been dilligent in their search, and the new lights turned on in the past twelve months have disentangled many perplexing difficulties. The detection and positive identification of the specific pathogenic micro-organisms which are responsible for the many contagious and infectious diseases, have engaged the attention of pathogenists and bacteriologists in all parts of the world. We rejoice to say that in many cases their efforts have met with success far beyond our most sanguine expectations.

With the aid of the microscope and various staining processes many of the organisms may be detected and accurately described. In the last few years the efforts to isolate the cholera vibrion, the bacillus of the bubonic plague and that of yellow fever, have attracted widespread interest, and it is now claimed that the etiological factors in all these diseases have been discovered and fully described. It seems not to be disputed that Dr. Ginsoppe Sanarelii, a native of Arazzo, Italy, has discovered the microbe of yellow fever. Sanarelii himself says that "the microbe of yellow fever splendidly presents, and is the strongest of all the microbes that are known." As soon as this discovery was made, he went to work in the preparation of a serum for its treatment, and has inoculated over 2,000 animals himself. From this extensive work the results were highly encouraging.

The successful efforts of scientists to elucidate some more simple method for the detection of the typhoid fever bacillus,

and the discovery of the inhibitory power of blood, or blood serum, from typhoid fever cases upon these typhoid bacilli, have attracted the special attention of clinicians, and have given them abundant reason to believe that we are on the eve of the consummation of these processess; when with them a positive diagnosis of typhoid fever may be made in the earliest stages of the disease, as well as a successful means of prophylaxis through immunizing serum. The micro-organism causing the affection known as typhoid fever was discovered by Eberth, in the year 1880, and has since been known as "Eberth's Bacillus." Under ordinary circumstances the bacillus is small, short and flagellated, with rounded ends. But its age and environments seem to possess wonderful power over its development, as the following statement will show: It is never found in chains, except when grown on potato culture, but when so grown this arrangement is common. Thaimo and Masselin have shown that when grown on bouillon the organism is slender. In width it is large. On potato or agar it is very thick and short. In old gelatine cultures it grows very long flagella. The germs are very actively motile, due probably to the long filaments with which they are provided. This bacillus may be found in water, air, soiled clothing, milk, dust, sewage, urine, blood, etc. Cold has no effect on the organism, several times freezing and thawing leave the germ virile, and capable of setting up its pathogenic work. Sternberg puts the thermal death line at 60° C. The organism is both parasitic and saprophytic, and consequently finds a suitable home under many different conditions of surroundings better than the majority of pathogenic germs. The bacillus will retain its vitality in one to two per cent. solutions of carbolic acid. This was once thought to be characterstic of this micro-organism, but recently it has been discovered that some others share with it in this propensity. Sternberg also claims that the germ retains its vitality nearly six months, when buried in the superficial layers of the soil. McFarland says this organism, and especially its flagella, stain well by the ordinary means, but lose their color entirely when stained by Gram's method. McFarland further states that when organisms are to be stained the best method is to "allow the tissue to remain in Lœffler's alkaline methylene blue for from fifteen

minutes to twenty-four hours; then wash in water, dehydrate rapidly in alcohol, clear up in xylol, and mount in Canada balsam."

Læsner has laid down ten characteristics to which the test must conform, in order to be positively identified as typhoid bacilli. They are the following:

1. The appearance of superficial colonies in gelatine plates.
2. Very active motility.
3. The large number of flagella originating from all parts of the bacilli.
4. Discoloration by Grams' method of staining.
5. Growth on media containing grape, milk and cane sugar, without gas formation.
6. Growth on milk without causing its coagulation.
7. Growth in protein containing media without generation of indol.
8. Production of acid when grown in whey, but not in excess of 3 per cent., as tested by one-tenth normal soda solution.
9. Growth on potato.
10. The failure to grow in Massen's normal solution with glycerine.

The chief difficulty in the ready detection of the typhoid bacillus seems to arise from the fact that there are typhoid-like bacilli—according to Flugge, no less than fifteen in number—and he indicates the strong probability of many others under the name of "Bacillus pseudo-typhus," which have not been definitely isolated. According to Germano and Maurea, no less than thirty have been found, some of which, the bacillus coli communis and bacillus fæcolis alkaligines, are constant inhabitants of the intestine, all of which at times respond to the various tests for the typhoid bacilli. Growing in the same manner on the different culture media, clouding bouillon in the same manner, being in the same shape, often having flagella, and sometimes motile, and behaving in so many ways like the typhoid bacilli, that many claim them to be identical. No symptoms running a typical typhoid course have been produced from inoculations in the lower animals with these bacilli. This disease seems to be communicated to the lower animals with

difficulty. It has been conclusively shown that if fecal matter containing the bacilli, or even if the pure culture be mixed with the food, and animals so fed for a considerable time, the animals remain unaffected. Nor are they diseased if blood from typhoid fever cases be injected into them, if we are to believe the state ments of such men as Gaffky, who "failed to produce any symptoms suggestive of typhoid fever in rabbits, guinea pigs, white rats, mice, pigeons, chickens and calves." Franke and Simon, however, found that when pure cultures are injected into these animals they die, and the bacilli are found in large numbers in the blood of the dead animals.

In the experiments of Chautemesse and Widal the symptoms following the injection of virulent cultures into guinea pigs, were briefly as follows: Very shortly after the inoculation there is a rise of temperature, which continues from one to four hours, and is succeeded by a depression, which continues to the fatal issue. Meteorism and great tenderness of the abdomen are observed.

From a private letter received from Dr. P. H. Hiss, Assistant Bacteriologist of the Health Department of New York City, I take the following: "Animals do not show typical typhoid symptoms, or lesions, from subcutaneous or intra-peritoneal inoculations of either living or dead cultures. The principal symptom from a non-fatal subcutaneous inoculation in animals under our observation is a varying rise of temperature, subsiding within a day or two. In man, I believe only dead cultures have been inoculated. No typical symptoms of typhoid fever were given, i. e., no typical course."

At the autopsy, so say Chautemesse and Widal, a sero-fibrinous, or sero-purulent peritonitis is observed, sometimes hemorrhagic. All of the abdominal viscera, intestine and Pyrés-patches are congested, spleen enlarged, blackish and often hemorrhagic. In cases which are prolonged the liver is discolored. So it seems that we have many discrepancies in the reports as to the results of these inoculations. And as the bacterial analysis is necessarily a long and tedious one, we are driven, for the present at least, to look to other sources for the ready recognition of this micro-organism. Many efforts have

been made to produce a culture medium in which only the typhoid bacilli would grow, or in which the growth of this bacillus would be so characteristic as would leave no doubt as to its identity. Many such media have been introduced, and at first with very promising futures, but after further trial have been found unreliable. But the one most recently brought forward, and giving brighter promise than all that have preceded it, is Elsner's acid potato gelatine, which is prepared by adding gelatine to infusion of potato. This is boiled and reduced in acidity. To this is added 1 per cent. of potassium iodide. This medium supports the growth of only two other bacilli—the bacillus coli communis and bacillus fecalis alkaligines. "The bacillus coli grew prolifically, and had the same appearance as when grown on acid media. The typhoid bacilli also grew, but could be readily distinguished after twenty-four hours. With low powers it was scarcely distinguishable. The bacillus fecalis alkaligines is distinguished by having alkaline products, while the typhoid bicillus is an acid-producer. Other bacilli never developed in this media to any extent."

Elsner was able to detect fifteen cases of typhoid fever out of seventeen examinations. But like the bacterial analysis, we cannot wholly rely upon this method of examination. So we turn with still more hope to the discovery of Pfeiffer, Gruber, Durham and Widal, that the blood of typhoid fever cases has a peculiar inhibitory action upon the typhoid bacilli, and that if this blood, or blood serum, be injected in small, but increasing, doses into man or animals, an immunity is produced in the individual against typhoid fever.

Fatal doses of the bacteria, if injected into other animals, will produce no symptoms injected into animals thus immunized. If blood serum, taken from a case of typhoid fever, or from an individual immunized against this disease, be mixed with typhoid bacillus culture and injected into the peritoneal cavity of a non-immunized animal, the animal remains unaffected. So, then, Pfeiffer's tests consist in the mixture of the suspected typhoid bacillus culture with a small quantity of serum obtained from an artificially immunized animal, then injecting the mixture into the peritoneal cavity of a guinea pig. If the suspected culture is the typhoid bacillus culture, it will

have been made innocuous by the toxic power of the serum, and no pathogenic effect will be produced. But if the germ be of another species, the toxin will have no power, and the effect produced will be characteristic of the species. This has been found to be a valuable means of diagnosis, but for the fact that it always requires the serum from an artificially immunized animal, and a long and tedious process is necessary to obtain this.

As soon as Pfeiffer demonstrated this power of serum over the bacilli, Widal set to work to make the diagnosis, and so great was his success that we now know it as "Widal's serum test." This consists in taking one part of serum from a suspected case of typhoid fever and mixing it with ten parts of typhoid bacillus culture. Such a culture is naturally cloudy from the diffusion through it of bacilli; but on addition of the serum to the culture, the bacilli are soon thrown down. The supernatant liquid clears away and remains clear, while the bacilli are thrown down in whitish clumps, or flocules. The bacilli are agglutinated, swollen and entirely motionless, and soon undergo solution in many cases. Widal experimented in the following way: He took several bouillon tubes and inoculated some with typhoid bacilli alone, and the other tubes he inoculated with other species of bacilli. He then added to each tube a few drops of serum from an immunized animal. and set the tubes away in an incubator at a temperature of 37° C. In four or five hours the tubes containing the non-typhoid bacilli became somewhat cloudy, but those containing the typhoid bacilli were perfectly clear. At the end of twenty-four hours the non-typhoid tubes became intensely cloudy, but the others remained clear. This test has often been made with the various species of bacilli with almost the same result in every case. It is true that some of the allied species have in a few instances given this reaction, especially the bacillus coli communis. Achard and Bensande found that prolonged exposure to a temperature of 60° C. did not affect the reaction, but that it was considerably diminished at 100° C., and was lost entirely after boiling for fifteen minutes.

To obtain the serum, the method employed is to asepticise the end of the finger, ear or elbow; then make a small punc-

ture, receive the blood and allow it to clot. Then decant the serum from the clot and add it drop by drop to the culture. If the serum is taken from a case of typhoid fever, the reaction begins at once. But if, on the contrary, it is taken from individuals in health, or from persons suffering from diseases other than typhoid fever, the reaction will not occur. That this reaction does occur, and in the manner and way described, is admitted by all, but at what time in the course of the disease this agglutinating property appears in the blood in sufficient quantity to produce the reaction, is by no means settled. By some it is claimed to have been found to exist in such quantity as early as the second day of the disease. If the case be found by further trial to be reliable, Widal's serum test will be of very great practical value in the diagnosis of typhoid fever. But on the other hand, if it is found not to appear in such quantity until the fourth or fifth day, its value will be greatly diminished.

From what can now be ascertained the preponderance of testimony is in favor of its not being found earlier than the sixth day, and by this time usually the symptoms of this disease have so fully developed that a diagnosis may be made.

Biggs and Park, of New York, report 422 analyses made by Widal, Achard, Johnston and others, and make the number of successes 95 per cent. on the first examination.

DISCUSSION.

Dr. Massie being invited to take part in the proceedings said: I am very grateful to the Society for their courtesy, and I appreciate being with you in North Carolina. There has been a great deal written on typhoid fever and especially along the line of blood exrmination. The microscope has come into use within the last ten or fifteen years and has been the means, as you know, of aiding surgery and medicine more than any other thing. The fact that when a man gets up to read a paper now, unless he goes into microscopic work his paper does not have the same amount of interest that it otherwise would demonstrates this advance. Our schools and colleges have established separate chairs for the teaching of microscopic work and the young men as they come up now are much better equipped than they have

been heretofore. I do not know that the medical board has a separate chair but the Virginia Board established a separate chair of Histology, Pathology and Bacteriology. I do not know gentlemen that I can add anything to this paper as I have done no special work on typhoid in particular, though I have along other lines.

Dr. Long: If I am correctly informed, microscopic work is connected with our present examining board.

Dr. Duffy: In that paper there is a very useful thought—that of the influence of the typhoid serum upon the typhoid bacillus. It puts me to thinking somehow or other, that in the administration of the coal tar antipyretics we interfere with the power of the blood to manufacture the antitoxin which destroys the bacilli. I merely throw out this suggestion, it may be that in our efforts to cure, we hinder the destruction of the typhoid bacilli.

Dr. O'Hagan: I suppose he means that fever instead of being a destructive process is really a method of liberating and expelling these toxins from the body and should be encouraged.

Dr. Duffy: While my suggestion was that the reduction of temperature by chemicals might prevent the production of antitoxine in the blood, I would certainly be unwilling to make the patient hotter. We have not yet learned the process by which this antitoxin is produced which has the power of destroying the life of the bacilli, but we hope that the aid of the microscope may bring us to the attainment of this knowledge.

Dr. Register: I would like to ask the doctor if the cold water bath would have the same effect on the patient.

Dr. Duffy: In answer I would say by no means. In the first place, it is conceded that the main object in applying cold water is not to cool the patient but for its effect upon the nervous system. Still, if to cool him were the only object, we do not introduce something into his blood which produces chemical changes and reduces the temperature. We do it either by the influence upon the heat forming center by the effect of cold on the peripheral nerves, or by cooling him as we would a piece of iron, and not chemically.

Dr. Register: Dr. Duffy suggested that cooling the fever to a certain point might prolong the fever. I ask if reducing the

fever with cold water would not have the same tendency to prolong the fever as cooling with drugs.

Dr. O'Hagan: I belive that the cold bath is universally admitted to be a great success, and that in applying it to the body, it is not for the cooling effect, but the tonic effect on the nervous system. The danger of using coal tar preparations has been pointed out years and years ago, I believe that the danger consists chiefly in its effect upon the process of metabolism. The more advanced physicians have now discontinued the coal tar preparations as of no value in the treatment of febrile diseases. We all know this, that the labors of Pasteur—that greatest of all great men in his particular department—have proved the value of these antitoxic serums. In the production of that serum we are entirely unable to explain the vital process going on. We can know this, that the use of the serum has been attended with very beneficial results. We have not been able to diminish the mortality more than one-half, but I believe that the time is not far off when the serum treatment will be applicable to quite a number of diseases. I can only say, then, that I was very much interested in the Doctor's paper. I am perfectly willing to confess my ignorance of bacteriology, still I bow my head to those who do know something about it and are instructing the older men.

Dr. Poole: I have been using Ehrlich's tests for the diagnosis of typhoid fever through the urine now for four years, and it has not failed me in the four years. Diagnosis by the microscope is very nice and very true, but, as is known, not everybody has a microscope, and not every one is capable of using one if he has it. This diagnosis by Ehrlich's test, as you know, consists of applying a strong solution of sulphanilic acid to an equal amount of urine, and to that add a weak solution of nitrite of sodium, agitate it and add a few drops of aqua ammonia. When this is done the reaction comes at once. If we have typhoid fever, the reaction is such that it must become a blood-red color. The only objection that might be raised is that several other diseases will react just as typhoid fever. Fortunately, they are such diseases as any practitioner ought to be able to differentiate between without any test, such as inflammatory rheumatism and several others. I might add that the test must be applied between the fourth and fourteenth day.

WHEN TO OPERATE.

By John C. Rodman, M. D. Washington N. C.

THE "When to Operate" in contra-distinction to the "How to Operate," or what to operate upon, shall be the subject of my remarks, and let me assure you gentlemen that it is no easy matter, with the necessarily limited experience of a country physician, to so elucidate these facts and theories, that it will be to you improving as well as interesting.

I shall begin with the following hypothesis, that it is just as important, if not more so in the majority of instances to know "When to Operate," as it is to know "How to Operate". Though the greater number of our text-books assume the case to be one in which only an operation is admissible, they teach us the technique, the mechanical part, and how to avoid the Scylla and Charybdis of our perilous course; yet fail to emphasise with the same care, the equally important question of "When to Operate". This question of "How to Operate" admittedly is necessary and proper as a requisite to our career as successful surgeons. But in the intrest of our patients and our own reputation it behooves us at the same time to prepare ourselves for that all important step of "When to Operate," for the time *when* must be fixed in all operations of election before operative measures begin. And most frequently the correct answer to the question *when*? means a life saved or much pain. That point of time when taken into due consideration has saved many a woman from months of agony and an untimely end in mammary cancer. In this disease, "Time When Operated Upon," controls the prognosis. It is comparatively a simple matter to amputate a breast, though I must confess that in no disease is the old maxim more appropriate "What is worth doing at all is worth doing well" and thoroughly. Though the earlier an operation is performed in this disease, the less is this of vital importance and vice versa. I am happy to to say that there are very few physicians in this enlightened

surgical age that do not in this disease advise an early operation and do a thorough one. That there are some who are tardy in this respect is to be deplored. To what degree "Time When Operated Upon," controls the prognosis in mammary cancer is as clearly shown in an article by Professor Frederick S. Dennis before the American Surgical Association some few years ago as in any literature I can find. Not only is this true of mammary cancer but of uterine cancer and all other operable malignant neoplasms. We can readily see, that if the inaccessible glands are involved, and the cells of the growth are scattered in inoperable regions, that no matter how beautifully and skillfully the operation may be performed, it is all for naught, or at best for temporary benefit. While to the contrary, if it is performed at its proper time, viz, in the incipiency of the growth, even if the technique is faulty and the operator not so skillful, we give our patients a good fighting chance for life and health.

In appendicitis "The When to Operate" if at all, is the absorbing question, before which medical treatment, manner of surgical treatment etc., descend to a secondary place. Certain of our leading lights in the surgical world have said "The When to Operate" should be goverened mainly by pulse, some by pain and tenderness, and others by temperature, and still there are others who viewing the field with a broader and more extended vision have not attempted to formulate any set or fixed rules, by which an operation shall or shall not be performed in every case of appendicitis; but rather do they, and it is with this latter class that I most heartily agree, decide by the clinical phenomena presented in each individual case taken in toto. We see cases that die with and without operative treatment; cases that recover with, when they would have recovered without operation; instances of abscess or gangrenous appendix, early in which, there has been a localized peritonitis and the septic germs are pocketed off, so to speak, nature here having curtained a and sleeping volcano whose rupture may take place at any time, with it almost certain death to the patient. If operative measures are instituted early enough to forestall this outbreak, the chances are that all will be well, but the possession of such diagnostic acumen, to enable us to learn the exact condition of affairs in every case, is the good fortune of but few, if any. Consequently

"The When to Operate," is still of the first importance and should be given the gravest consideration, for in many cases the life or death of an individual hinges upon this point of time. The fact that there have been cases in which an operation was advised by physicians, accepted by patients, and in the course of the few hours, in which preparations were being made, the patient's condition improved, and recovery took place from medicinal measures alone, tends to make us temporize and put off operative treatment from one hour to another, hoping against, sometimes, our better judgment, that the good fortune of some others may be ours, but such delay is fraught with danger, for at times the space of an hour is enough to convert what would have been an aseptic operative field, into a diffuse septic peritonitis, with its high mortality rate. Do not understand me to say, that every case of appendicitis should be treated surgically, for cases do recover without the knife, but surgical science has saved many, while delay in operable cases has caused deaths which might have been averted, so we must believe that the "Time When" is the all important point. Some years ago in gangrene, when in operable regions "The When to Operate" was always decided by the line of demarcation and an amputation was deferred until nature fixed the time, but fortunately at this day we are not always so conservative. In a case of rapidly spreading gangrene, with beginning septic intoxication, it becomes a question of dire importance as to whether an amputation should be performed then or when? We know that if our patient dies, he will die from septic intoxication, due to absorption of ptomaines formed by the pathogenic bacilli in the gangrenous parts.
is a simple matter, a mere amputation, but when? is the question. Whether to let our patient run the gauntlet of acute septicæmia, and wait for the line of demarcation which may not come ere death take place, or to take upon ourselves the responsibility and operate then? The question becomes a serious one, as it does in all cases where the future may show, that procrastination has indeed stolen our last chance of success. This is eminently true in acute intestinal obstruction, for heeding to the cry of suffering humanity, we are often tempted to give the anodyne—opium in some form—thereby masking the real condition and giving to the patient that sense of well being, which is so often

direful in its deceptions. This disease in its incipiency, is not always so easily diagnosticated for surgical treatment, and may be mistaken for other troubles which recover without operation. Thus we often attempt to relieve by purgatives, high enemas and drugs which have a relaxing effect, and many other things which may suggest themselves to the conscientious physician, who realizing that he may have a serious case to deal with works long in the vain hope of alleviating without an operation, that, which owing to the surroundings and dis-advantages of a country physician, he looks upon with a great deal more gravity, than if it were in a modern hospital. The conclusions that I would draw from these facts, are that there comes a time, when temporizing must end and conservatism ceases to be a virtue. The correct answer to the question "When to Operate" makes the successful surgeon, the great benefactor of his fellow man and a true disciple of the Great Healer.

"THE SURGICAL TREATMENT OF HEMORRHOIDS."

By James M. Parrott, M.D., Kinston, N. C.

IN discussing the surgical treatment of hemorrhoids I shall not go into the history of the various methods of operating, nor into minute classification or symptomatology, but shall endeavor to present a few salient points of practical importance, believing the report of cases illustrating the various operations to be more interesting and instructive than a necessarily dry rehash of the pathology, etiology and symptoms found in our works for reference and text-books on surgery and rectal diseases.

The surgical treatment of an external hemorrhoid is very simple indeed. There is but one operation which, in my opinion, should be followed and that is the old plan of simply incising each and every pile after thoroughly cleansing and cocainising. From one to three minims of a 4 per cent. sol. cocaine is sufficient for each pile. The bleeding is insignificant and no after-treatment is required except packing a tuft of antiseptic cotton into the wound. This readily heals and at no time is the patient inconvenienced by its presence, usually returning to his work a few hours after the operation. A great majority of the cases of external piles when treated by the palliative methods will recover without an operation, only the more chronic or highly inflamed cases requiring surgical treatment.

Externo-internal and internal hemorrhoids are more serious, more difficult to cure and of course necessarily require more skill and attention in their surgical and medical treatment than does the external variety. The palliative treatment for these forms rarely cures permanently, giving in those cases which it benefits at all only temporary relief, nearly every case thus successfully treated recurring when its cause such as hepatic congestion, habitual constipation, etc., returns.

The treatment by the injection of carbolic acid in my opinion

cannot be too severely condemned. I once used this method, much against my will, in three cases which I saw consecutively in consultation. In two cases the patients suffered a great deal from pain and hemorrhage and very soon after the inflammation produced had subsided the piles promptly recurred. In the third case an ulcer of the rectum was the result though the piles were destroyed. This injection treatment requires several weeks and is almost certain to be accompanied or followed by one or more of the above complications or by periproctitis, ischio-rectal abscess, phlebitis, hepatic abscess, pyemia, or even by death. I used for each pile the injection of 10-15 min. of solution of 3 parts water, 3 parts glycerin, and one part pure carbolic acid.

I have never seen a case of hemorrhoids which I thought severe enough to justify me in performing Whitehead's operation. It seems to me to be needlessly severe and radical. It must necessarily be accompanied by severe hemorrhage and the attending dangers of suppuration, which is very apt to follow, must not be forgotten. Stricture of the rectum is a frequent resulting complication as are also ulcers, fistula in ano, pyemia and phlebitis.

The ligature method is by far preferable to either Whitehead's operation or the injection and yet it is not without imperfections, and is easily outclassed by either excision or the clamp and cautery. One who has not tried it cannot appreciate how difficult it is to tie a pile sufficiently skillfully as to cause its safe and sure sloughing. While this sloughing is the real and necessary result which we desire to obtain, it within itself is one particular reason why I so quickly abanboned this method of operation. A great many times the ligature will not slough away, thus necessitating another operation. The after-treatment lasts at least two weeks even in the most favorable case. During the greater part of this time the patient is confined to the bed suffering much pain and inconvenience. The danger from the prolonged exposure to pyogenic germs should be remembered. Stricture and ulcer of the rectum are very frequent results, being much more so than a great many surgeons will admit. The ligature method is far from a sure one and it is embarrasing indeed after going to all the trouble of this operation, its after-treatment and inflicting such pain, danger, inconvenience and expense on our

patient, to be confronted as a result not only by an uncured case, but often by the most serious effects in the shape of dangerous complications. In the great majority of cases the ligature method will, however, give a permanent cure, though in a fairly large minority it utterly fails.

Experience has taught me that by far the most reliable and satisfactory method of operating for that class of hemorrhoids, known as the venous externo-internal pile (and this is the most common variety) is the method which might be designated simple excision. The idea was first suggested to me by the incising method of treating simple external or skin piles. Since then I have learned that Allingham had for some time preferred this method. The excision method is very simple indeed. The sphincter is stretched, the lowest pile is caught up with rat-tooth forceps and cut off and any vessels which may bleed are twisted. I usually then, to prevent further hemorrhage, pack the rectum with gauze soaked in diluted Monsel's solution. A simple T bandage with aseptic cotton is applied and the patient is put to bed. The following afternoon, 36 hours after the operation, the dressings are removed, the anus irrigated and aseptic cotton and T bandange reapplied and the patient is allowed to sit up. Forty-eight hours after the operation the anus and rectum are again irrigated and the patient is discharged after being instructed to use locally a mild carbolized ointment daily for several days.

In a great many cases it is not necessary for the patient to remain in bed more than 24 hours and then the dressings are only applied once. The bowels are allowed to move on the third day, generally, though often on the day following the operation. The after pain from this method is never great and only lasts a day or two. Stricture and ulcers and other serious complications have never followed this method at my hands. Post-operative hemorrhage is never even troublesome. This operation is thoroughly cleanly as to after-treatment and requires no special skill in its performance. It is safe, sure and reliable, in my hands curing nicely and promptly several cases on which the ligature method had been tried and failed. In many cases cocaine will be the only anesthetic needed, thus removing the necessity for skilled assistance and extra expense. While I have never

had an opportunity to try this method on an arterial pile still I believeif the vessel after the pile is removed is carefully twisted itwould act as nicely as it does in the venous variety. Of course in the capillary hemorrhoid its use is out of the question, Paquelin cautery being then necessary.

In treating high internal piles the clamp and cautery method is preferable to excision. As in all operations for hemorrhoids the patient is instructed after the lower bowels have been thoroughly emptied the previous night to force down the pile by straining over a tub of hot water. The anus and rectum are disinfected and sphincter dilated. The pile is caught and drawn down and the clamp applied (Smith's in my opinion being the best). After cutting off the pile the stump is seared with the Paquelin cautery, an antiseptic dressing applied and patient put to bed. The dressings are changed on the following day and anus and rectum irrigated. An astringent holds the bowels in check until the third day. The patient suffers scarcely any pain except at first act of defecation and resumes his occupation on the 4th or 5th day after the operation. This operation is surer to cure, safer from the dangers of suppuration, is more cleanly and less painful and is no more liable to produce stricture or ulcer than the ligature method. Troublesome hemorrhage is never a complication in the after-treatment of the operation by the clamp and cautery method. The time consumed in the after-treatment by this method is 8 to 10 days less than by the ligature method, thus saving much time for the patient and trouble for the surgeon. The chief disadvantages of this method are that it requires skilled assistance and a special instrument, the clamp, the cautery being a necessary part of any general surgical outfit.

I have selected from among a great many I have operated on by these methods three cases to illustrate the better the various points brought out in my necessarily hurried descriptions.

Case 1—Chas. W. age 41 years. Fisherman. When 18 years of age had an attack of malaria fever followed by obstinate constipation and later by hemorrhoids. The piles were for 10 years only troublesome when purgatives were taken. In 1880-8 he had chronic diarrhea for 18 months, during which time the piles greatly enlarged and became very troublesome.

One and a half years before I was consulted, the piles were injected with carbolic acid by a rectal specialist. This proved a complete failure. On June 19, 1894, I ligated 7 piles, two being very high up. I used every precaution and tied each pile as skillfully as possible, the rectum was cleansed, an antiseptic dressing applied and patient put to bed. The usual after-treatment was followed. Four days after the operation the patient had a rise of temperature, reaching 103° on the fifth day. This was probably due to suppuration and constipation. The after-treatment occupied 3 weeks, the patient being discharged on the 21st day. Five days later he returned complaining of severe rectal pain. An examination showed that only 3 piles had sloughed away, leaving 4 still securely tied. I then tried the excision method as above described, using cocaine as the anesthetic. The result was perfectly satisfactory, giving no after trouble at all, the patient suffering scarcely any pain and no special inconvenience. On the 2nd day after the excision operation the patient was again discharged. I saw and examined him four months after and found him entirely well in every particular. Two years later I had a letter from him stating that he was in the best of health.

Case II—W. O. Male. Age 31 years. Grocery clerk. Had for years suffered from constipation and attributed piles to straining at stool. When consulted had been troubled by hemorrhoids 3 or 4 months. He readily consented to the operation which I proposed. I used the clamp and cautery method and removed 5 piles. Iodoform gauze was packed into the rectum immediately after the operation and removed on the second day; at this time anus was dressed with aseptic cotton and a T bandage. The patient was given astringents to prevent defecation until the 3 day. Epsam salts was then given and had the desired effect. The first pain of any consequence was experienced during the first act of defecation, and then lasting only a few minutes. Suppuration was very slight causing no inconvenience. Patient made an uneventful recovery and was discharged cured on the 5th day. In this case all the piles were highly situated save one. Chloroform was the anesthetic used. This patient was seen 14 months after the operation and his anus and rectum were normal and healthy.

Case III.—Mr. W., age 39, railroad engineer. When he first consulted me he had had externo-internal piles 6 months. On July 11, 1896, I removed threc piles by excising, using cocaine as the anesthetic. Just before the operation the rectum was well cleansed by enemas and the patient made to strain over a bucket of hot water to force down the piles. A piece of gauze soaked in diluted Monset's solution was packed into the rectum after the operation, and aseptic cotton and a T bandage were applied. These were permanently removed the following day. On the second day after operation patient was up and on the third day he returned to his work, suffering and having suffered no pain nor inconvenience save a slight soreness at the site of the operation. Eleven months after the patient shows a complete and perfectly satisfactory cure.

While ambulance surgeon in the Charity Hospital, New Orleans, I once operated by the excision method on an Italian suffering from strangulated venous externo-internal piles. He was so completely and quickly cured he left the hospital two days later, before I could obtain a history of his case. This operation is a fair sample of the operations of this kind. I have never had any but the most pleasant results from the excision method, case III. being a typical one. In case I. the injection was tried by an expert and failed. Ligation failed. Simple excision was tried and cured promptly and permanently The clamp and cautery have acted nicely in thirteen cases for me, but since I have been using the excision method I have abandoned it altogether, save in high internal venous piles and capillary hemorrhoids. The excision method is much quicker, simpler and easier performed, is safer and in fact more satisfactory in every particular than the clamp and cautery. All in all the excision method is in my opinion much to be preferred to all other methods for the surgical treatment of externo-internal venous hemorrhoids.

"A NEW METHOD OF DEALING WITH INOPERABLE CASES OF CANCEROUS AFFECTIONS OF THE UTERUS, WITH REPORT OF CASE."

By W. L. Robinson, M.D., Danville, Va., Ex-President of the Medical Society of Virginia.

I THANK you for the honor of this invitation to read a paper before you, the more so because I recognize the ability and advanced thought which has ever characterized your Society. Self indulgence would dictate rest in these salt breezes and I would be more than repaid for my dusty ride by listening to your valuable papers and scientific discussions, but I hold that whatever is in a professional man's life work, that he finds. promises alleviation of human suffering or is helpful to his brethren, should be given honestly and promptly. The good results I have obtained in two cases of that hitherto doomed class, who either suffer hopelessly to the end or sleep from morphine till death liberates them and their friends from distress and agony, impels early publication.

I have dared brave the criticism "that nothing is proven by the short history of these cases," in the hope that the quickened perceptions and untiring zeal of our profession may evoke something more than the verdict rendered to our past efforts of "Loves labor lost."

The history of these two cases of carcinoma of the uterus, verified by the microscope will be brief and pointed.

Mrs. R., white, of Pittsylvania County, Va., 64 years of age, mother of four children, was referred to me January 10, 1897. She had noticed a slight hemorrhage, alternating with offensive watery discharge from vagina for eight or ten months. Constant pain increasing as night approached which robbed her of sleep, broke down her vital forces, resulting in emaciation and despondency. Vaginal examination reveals an indurated, cupped cervix, excoriated only within the cervix and lower seg-

ment of the uterus—the induration extended on the left side to the bony pelvis, with firm peri uterin adhesions fixing the uterus immovably. Micturition painful and frequent.

January 16th aided by Drs. Nelson, Harvie and others, I opened the abdomen supra pubically, ligated the ovarian vessels, severed the broad and round ligaments, then dealt with the uterine artery and sacro-uterine ligaments in like manner, thus relieving the tension which kept up the pain, proven by the fact that she has never suffered any pain, except during the healing of the incision from the day of operation. The incision healed promptly and on the eighth day following the operation I commenced injections of boiled alcohol, which I continued every third or fourth day for two months—the injections were made via the vagina by long needles into the uterine and peri—uterine tissue, commencing with 20 minims, safely increased to 100 at each sitting. Pulse was greatly accelerated, redness of face, full feeling about the head. Considerable pain was caused by the injections in the indurated tissues. Result of two months treatment, cessation of all discharges and odor, pain abolished, insomnia cured, appetite restored, spirits good, irritable bladder relieved and the indurated area much reduced. This condition existed late in April when I last heard from her.

Case 2nd.—Hattie Lovelace, col'd, an intelligent and model patient—37 years old—referred to me December 1896. History of hemorrhage, offensive discharge, pain, emaciation, insomnia and loss of appetite had gradually increased for eleven months. Bladder irritation and rectal pressure annoying. The cervix was gone and a large raw, oozing surface existed—uterus immovable. The necrosed tissue exposed was touched lightly with the thermo-cautery, then operated as in preceeding case, followed by prompt healing of abdominal incision. The relief from pain was prompt so far as tension was a factor. Injections begun on the eighth day and continued as in first case.

This case was septic when she came into hospital. Even temperature, usually 103—pulse 120. The discharge was much slower in yielding than case I. The bladder trouble and rectal pressure disappeared in two months. The area of induration perceptibly diminished. The septic condition baffled my efforts for quite a while—the continued fever and septic

diarrhœa were uncontrollable till I gave hypodermic injections of the antistreptococcic serum on 3rd and 4th February. The effect was so prompt that I could not doubt. In forty-eight hours the temperature came down to normal and did not return and in 5 days the diarrhœa had ceased to trouble her. Her vaginal discharge stopped and her husband reported so late as yesterday, June 5th, that there had been no return. She has had occasional disturbances with frequent but painless micturition, lasting only a few days. No return of fever or diarrhœa, appetite fine, condition comfortable, though she has not regained flesh or strength as her general relief would warrant. I omitted to state that I used tannate of alcohol and Methyline Blue as topical applications to the granulated surface with marked benefit in diminishing discharge and producing healthy appearance.

The needles were made to order, 6 inches long and small at the end for introduction into the tissues, but fortified near syringe attachment. There should be a shut off on each needle so as to detach from syringe after injecting the alcohol, thereby preventing the back flow of alcohol following withdrawal of the needle.

You will observe, gentlemen, that in injecting the periphery of the diseased area, I followed the principle advocated by Hasse of Germany, of "inducing scirrhus contraction in the connective tissue, thereby causing fatty degeneration of the metastatic cancer cells in the lymphatics surrounding the tumor." By this method combined with the cutting off the blood supply of the diseased uterus by ligation of the ovarian and uterine arteries, we should reasonably hope for a sclerotic contraction in the interstices and a "fatty regressive metamorphosis in the parachyma of the diseased tumor."

The thoughts I wish to impress are: 1st. That ligation of the uterine and ovarian vessels shut off a large portion of the blood supply in these cases and that severing the broad and sacro-uterine ligaments relieved the pain due to tension; which means freedom from anodyne and its train of evil consequences, restful sleep, good digestion and assimilation—in a word, improved health.

2nd. That the injections of alcohol produce atrophic changes so that the general infection is reduced to a minimum or entirely prevented.

If the suggestions embraced in this short paper shall stimulate any to perfect a method of relief for such cases, I shall feel that my life has not been in vain.

3rd. The happy influence promptly manifested in the septic case by the antistreptococcic serum.

We have all been impressed with the fact that cancerous tumors are much less likely to recur after operation performed before degenerative changes result in breaking down of tissue into pus. Is it then unreasonable to hope that by the methods proposed in this paper we may approximately restore the system to a pre-suppurative stage, inhibit general infection and prolong life in comparative comfort?

I have left bacteriology to be discussed by others and have only attempted in a plain, practical manner to interest you by the description of simple surgical procedure to relieve those who distress every community, who when they pass the operative stage, drift into the hands of quacks, whose only object is deception and gain.

GENERAL DISCUSSION ON SURGICAL PAPERS.

Dr. O'Hagan: I do not know that Dr. Rodman's paper admits of any discussion. When to operate is the great question of surgery, and it has been illustrated by the gentleman and fully proved that of all things in the world, procrastination is most to be guarded against when an operation is contemplated. I know that the Society is indebted to my young friend Dr. Rodman for one of the most logical papers presented on this section.

Dr. Hines: I have had the misfortune in the past 54 years to see five patients die for the want of that good judgment which Dr. Rodman advocated. I had one of my own, and knew that he ought to be operated upon, but consultants objected. I even found pus, and still they refused to endorse the operation, and my man died. I have heard of several who have died for the want of an operation at the proper time, and I commend the paper of Dr. Rodman to the consideration of every gentlemen here. It

is important to know when to operate and when not to operate.

Dr. Weaver: The question seems to be, in my mind, how to determine to operate. It has been my good fortune to see Dr. Mc'Burney, the master of surgery in that particular operation for appendicitis, operate, and he himself in one particular instance could not determine when to operate. I remember the case. A young gentleman of fine physique, apparently healthy, came into the hospital. He complained of pain in the iliac region, without any fever, without any nausea, slight constipation, without rise of temperature. Precautionary measures were taken, and he was put to bed with a possible diagnosis of catarrhal appendicitis. That was 11 o'clock in the day. About midnight the doctor was sent for to the hospital. The young man had a sudden rise of temperature, a severe chill, and he then diagnosed appendicitis, brought him before the class that morning, did his admirable operation, cut down on a tumor that had been lately developed, and to the astonishment of the class, he found impacted in the appendix a brass pin, which he took out with some pus. All antiseptic measures were taken, and it was a successful operation; the young man lived, which could not possibly have been the case in the hands of a novice like myself. The point is this, and that is the great desideratum. I have never been able to know exactly where to draw the line when to operate. It has been my observation and practical experience to see many cases in our region die from the honest want of knowledge of when to operate. They might have been saved if we could have made a thorough diagnosis and known when to operate, and when that time does come, it will mark an epoch in the history of appendicitis.

Dr. Hodges: I thank you very much for this invitation. I may have gone to another State, Mr. President, but I am still a North Carolinian, as my Colleague is pleased to style me, and, in Virginia, I am still so accustomed to speak of myself as such, that I am never introduced to a Virginia audience except as a North Carolinian.

I wish to say now, before I discuss this paper, that I have felt prouder of the North Carolina Medical Society in the last few moments than I ever felt before. As I sat and listened to the recent discussion, I was fearful that you were going to pass

that resolution and let down the bars and make the Medical Profession a trade instead of what it always has been in this State, a high and honorable calling. I am delighted that the Society has taken the step it has, and I congratulate you upon the fact that the North Carolina Medical Society will still retain its high ethical standard among the Medical Societies of the United States.

Coming to the subject under discussion, I wish very much that some of the older gentlemen present would take up this subject and discuss it from the point of view of their personal and practical experiences, "How to Operate," all of us are supposed to know, but "When to Operate," as I understand it, takes in the whole field of Surgery, and must vary according as there are different diseases, and different disease–conditions present themselves.

In my opinion, it is not so much the special technique of the individual surgeon, as it is the judgment that prompts the operator to undertake a given case. Experience is the safe guide in all theses cases, and upon it depends the best ultimate success.

I believe that, in many instances, Surgery is brought into disrepute because of inexperienced operators attempting every possible operation that the seeming exigencies of the case might demand; moreover, the World, it seems, is about to go wild on this surgery craze; and many reckless operators presume that when a patient falls into their hands that, if every organ and faculty is not exactly normal, that this deviation, however it may be, must be remedied by radical means; oftentimes, indeed, they attempt to revamp the patient as the Almighty never intended him to be, and the results are not always what has been anticipated.

Rightfully used, Surgery is a great boon to the human race; and its success, in my judgment, depends, for the most part, upon when to operate; for there is such a thing as killing people sometimes when there is no necessity for killing them.

In this disease, appendicitis, to which the writer has called attention, the point, when to operate, is still under discussion; and the most able surgeons have not been able to say exactly at what moment, and what class of cases are to be operated upon; most of them, at this time, agree upon an early operation in

acute fulminating cases, while in recurring or relapsing cases of appendicitis the rule is to operate during the intervals. It seems, however, that no absolute criterion can be laid down as to the time when to operate, for some of the most serious cases often do not show the usual danger signals, such as high temperature, increased pulse, etc.

I have heard an eminent surgeon in our city say that, to him, the facial expression of the patient is the sure indicator for operative procedure, and often in his experience the suppurating appendix, clasped in the forceps, was the best verification of his judgement.

It seems to be proved by these who have had most experience that early operative measures have saved most patients, but, as I have said before, it is still a vexed question; some operating the minute the disease is diagnosed, others waiting to see if it cannot be cured by palliative and medical means.

In regard to another paper that has been presented, I wish to say a word. I have listened to my friend, Dr. Robinson, with a great deal of pleasure; and I believe he is entitled to credit for the method he has inaugurated, for "by letting down" the uterus you relieve the strain and tension and also cut off in a great measure the blood supply to the diseased organ, thereby being able to treat the disease purely locally. Hass, of Germany has been using these injections of sterilized alcohol into the tissues with great success, but it seems to me that Dr. Robinson, by his method, opens up a point that is worthy of investigation, for, by these means, he is better enabled to bring about trophic changes and a cirrhotic condition of the tissues. This treatment appears to me to be especially applicable in the first stages of carcinoma; but suppose, as many of us do, that we get hold of a case in the later stages of this disease, which, as you know, is the bane and probrium of Medical and Surgical Science; one of those cases, in fact, for which we can do nothing but stand by in mute helplessness and see the poor patient drag out a miserable existence. What simple means can we use to benefit such cases?

I want to tell you of a method which I have used, and to which I give credit to Dr. Betton Massey, of Philadelphia, and it is this: the use of zinc amalgum electrodes applied locally to the cancerous tissues. Within the last six or eight months I

have had two cases in the last stages of this disease to come under my care; in one of them, when I inserted the index finger to make an examination, I tore away a piece of the crevix by simply touching it; and, upon further examination, found that the whole anterior wall of the vagina was involved; the patient was suffering, of course, much pain and the usual disgusting odor was present. Realizing that the case was too far advanced for operative interference, I resolved to use amalgam cataphoresis treatment, and with the result that the odor was quickly removed and the pain, except at the time of the application, was diminished to almost a minimum. This case, as well as the other which later came under my observation, both improved as regards their individual comfort, being relieved to a most appreciable extent of their pain, and the accompanying odor.

These applications did not stop the disease, but they brought about an approximately healthy surface for treatment, and on the whole was very satisfactory. What this treatment might do in the incipiency of the disease I do not know, but, in its later stages, it brings comfort to the patient and friends, and robs the disease of many of its last horrors.

AN ITEM ON CAUSATION AND PREVENTION OF DISEASES OF WOMEN.*

By J. Steven Brown, M. D. Salisbury, N. C.

DEEPER than we are prone to look we must search for many causes of disease.

By making us lead lives distorted and empty because of our imbecile subservience to the habits of society; by making us follow injurious fashions in dress; by forcing upon us unsuitable or unhealthy food and often at unreasonable hours; by innumerable artificial and superficial rulings, present American Society demands many a blow at good health and genuine happiness. Errors in diet are often committed from ignorance or impecunity or, forsooth, because the artificial guest is more willing to sin against him who created her and gave her a body to account for than to run the risk of offending her hostess by a seeming lack of appreciation.

A load of skirts are hung from the compressed waist and the wearer seems not to know why she is tired and full of aches. She cramps her lungs, her bowels and her feet in the vain Chinese hope of improving on the shape and size given these organs by their creator.

Forced mental training often saps the vitality of the budding woman and seriously disturbs her physical development.

Just as in the days of our grandmothers and their predecessors those who are unfit for motherhood because of youth or age or hereditable disease still marry and are given in marriage. To many who are physically well qualified maternity has become a burden instead of a joy, and hundreds of invalids must refer the beginning of their invalidism to criminal aborton done for the sake of avoiding pain and care and for enjoying the socalled sweets of society. These and many like causes demand proper preventive treatment. But they are not the cause that most urgently call for removal.

Statistics are not sufficiently abundant, complete and unprejudiced to make them of much value. Still I venture the statement that specific vaginitis and its extentions cause more trouble than any other pelvic inflammations. And yet while the prostitute claims these inflammations as her rightful inheritance, she can by no means claim a monopoly on them. Thousands of thoroughly virtuous women are daily called upon to help reap the wild oats of their husbands; and thousands of these husbands are called virtuous men.

An acient philosopher says that virtue is summed up in a knowledge of good. He who knows what is good will do good. Evil arises from ignorance. Men are immoral because they are not sure that their acts are wrong.

While we may not fully agree with Socrates it is quite probable that if men and women and boys knew more about these matters, and the suffering that follows and spreads from improper sexual indulgence a healthful wave of reform would sweep over our land and purify our murky atmosphere.

Unmarried men need to know that sexual indulgence is not at all necessary for their health and vigor and the maintenance of their virility. They need to know, and many of them do realize sadly, that it is not an essential factor in happiness, but always shows unhappiness as a part of its product. They need to know that occosional emissions are not inconsistent with good health. They need to know that gonorrhoea and its congeners are not cured half so easily as they are contracted, and that often when these diseases are not apparent, they are still latent and may remain so for months and years. They need to kuow that hosts of women are victimized and made chronic sufferers because of these latent cases in their reformed husbands. Men need to know that sensualism saps both mind and body. They need to know that impurity of thought and deed dulls and debases man's ideas and converts the glory of life into a miserable existence with no higher joys than fast vanishing sensual pleasures. They need to know that the good Book which gives so many instances of impurity among the chosen children never commends that impurity, but always condemns it and commands us to abstain from it.

To recapitulate: 1. One great crying *disease* among women is *Specific Inflammation* of the pelvic organs and tissues.

2. Its *cause* is impure intercourse.

3. *Prevention* is best secured by a reform in morality.

4. *Our Duty* as physicians is to tell the people plainly that prostitution and its kindred evils debase the mind, debauch the body and constantly curse and degrade the human race, the noblest of all things created.

THE IDEAL ANTIPYRETIC.

By E. G. Goodman, M. D. El Paso, N. C.

IN the discharge of the duty imposed on me as Chairman of the Section on Materia Medica and Therapeutics, I shall not essay on the enumerations of the many additions to the materia medica, with an epitome of the literature on the same.

Such a procedure would be prolix, and devoid of interest to those who have kept abreast with the current literature of the subject.

The field of experimental research for every observer is necessarily limited, and the period of a few months is far too short to demonstrate the true merit of a valuable remedy, or to relegate a worthless one to the shades of oblivion.

The conscientious practitioner is accustomed to regard with skepticism the extravagant claims of excellence made in behalf of every new remedy by those who are accustomed to bow at the shrine of novelty, and worship at the altar never graced by genius.

Medical literature is teeming with wordy productions which represent only the gush of enthusiasm inspired by every innovation which offers a transient gleam of hope for the success in the conflict with disease. These productions of the pen, laudatory of the improved virtues of some medicament, are often based upon the imperfectly observed results obtained by the administration of a sample package gratuitously distributed by the manufacturer.

Before a therapeutic remedy can receive the stamp of permant utility, it must be thoroughly tried in the crucible of clinical investigation based on scientific principles; for a few favorable results attending the use of a certain kind or method of medication may be coincident with the recuperative energy of nature, and not due to the means employed.

In asking your attention to the consideration of the subject

selected, it may not be unecessary for me to preface further remarks with the statement that "the ideal antipyretic" is a hypothetical substance and not an actual entity.

We have not yet reached that stage of perfection in which the materia medica is enriched with a remedy that measures up to the ideal treatment of pyrexia, though such an attainment is a "consummation devoutly to be wished."

In recent years the labors of the synthetical chemist have been rewarded with no more brilliant results than the production of that class of drugs known as antipyretics. Others, indeed, having been announced to the world by some of the master minds of medical science, have enjoyed a short lived notoriety due to the expectation of usefulness inspired by the prestige of these great names.

The old-time conception of the conservative nature of pyrexia as being a manifestation of the reaction of the human organism against pathogenic germs, and therefore eliminative, has led many to depreciate the use of antiypretics and to assign them to a place of secondary importance in the treatment of disease.

Such a conception is too vague and speculative to be entitled to serious consideration. However ingenious the hypothesis; however plausible the theory; and however illustrious may be the names of the advocates of such theory; yet, the accumulated evidence of clinical experience stamps it with an emphatic negative.

The field of therapeusis almost entirely is circumscribed to symptomatic treatment. To reduce temperature; to relieve pain; to regulate disturbance of the circulatory apparatus; to sedate an excited nervous system or to stimulate the same when depressed; to check or neutralize abnormal discharges; to stimulate the glandular organs to normal activity; and to nourish the patient with suitable aliment;—these are indications for the exercise of every therapeutic resource at command.

It is a lamentable commentary on the boasted achievements in medicine that, at this late day, we know of no remedy entitled to be called a specific, if we except the action of quinine on the hæmatozoon of malaria and the influence of mercury on syphilis.

Ever since the search-light of modern science has revealed a hitherto unknown world of living organisms as the potent cause

of many of the ills of human flesh, it has been the cherished object of therapeutists to take the shortest route to success by administering the death dealing portion directly to the invisible causative agent of disease.

However laudable the object in view, the means for its attainment are unknown, save in two exceptions noted above; and, until such remedies are found, therapeutic skill finds its legitimate exercise in combatting symptoms as they arise, and in aiding nature to resist the inroads of disease.

Of all the symptoms that manifest the presence of disease, there is none more often encountered, and none more deleterious in its effects on the human organism than pyrexia.

However imperfectly understood may be its cause, whether due to the action of the product of pathogenic organism on the thermic centers, or some other cause equally obscure, its results are such as to remove the "flattering unction" that it is a conservative process rather than a pathological element that decimates the human family by its own destructive influence.

Beginning as a symptom it soon becomes the initiation of a series of morbid phenomena more wide reaching and destructive than those which properly characterize the primary cause.

When we consider the almost uniform temperature of the human organism, and the narrow limits of variation compatible with life, we read the handwriting of nature in legible characters dictating the course to be pursued when the temperature departs from normal.

Bacteriologists have abundantly proved that the lowest forms of life are far more resistant to the action of heat than is the highly complex and delicately formed structure of the human body. With this fact established beyond all cavil, we are forced to the conclusion that fever is conservative to the human body in the same way that the sword of Hamlet was conservative to the body of Polonius when it made of him a supper for "convocation of politic worms."

The injurions effects of fever are clearly manifested to the most casual observer in the sick room, and are demonstrated by the pathologist on the post-mortem table. It is itself a toxic agent, perverting the function of every organ, and acting destructively on every tissue; and, if long continued, needs but to pass very

narrow limits to effect the dissolution of the body with a certainty and rapidity that shame the tardy action of the much dreaded bacteria.

The constant attendance on pyrexia of such symptoms as restlessness, jactitations, delirium, hebitude of mind, convulsions and coma, and the rapid subsidence of these symptoms on abstraction of the excess of heat, would plainly indicate that, whatever may be the source and cause of disease, pyrexia as a disturbing element is second to none.

Parenchymatous degenerations of muscular tissue is a constant accompaniment of, and often dependent on pyrexia, and increases with increment of temperature. No muscles participate in the degenerative process more than does the heart, and in fevers long continued, this becomes a source of trouble that baffles the skill of the physician, and often consigns the patient to an untimely grave.

The role which fever plays as a factor in disease is well illustrated by the phenomenal reduction of mortality in enteric fever by the cold-bath treatment.

Here, obviously, no fine-spun theories of germicidal action can share the glories of the triumph which therapeutics wins over disease. The good accomplished, apart from the invigorating influence on ths nervous system, depends on keeping the body at or near that temperature which nature ordained as the most suitable for its growth and perfection, for the healthy performance of its functions, and as the greatest safe-guard against microbic invasion amid the ever-recurring vicissitudes of climate.

Ever since the time of Galen the utility of the external application of cold to counteract the dire influence of fever challenged the consideration of the profession until its efficacy was demonstrated to the world and stamped with tne seal of permanence by the labors of that benefactor of humanity whose name is synonymous with the cold-bath treatment.

Antipyresis is a therapeutic resourse that has passed beyond the stage of experimental uncertainty, and verifies its claim to preferment by the great percentage of human lives that have received a new lease of existance under its benign influence.

That we have antipyretics prompt and certain is a fact too well known to need confirmatory comment; but the property on which

their value depends is so intimately blended with others of a dissimilar nature as to restrict their usefulness at a time when their use is imperatively demanded.

Without the aid of prophetic inspiration to penetrate the veil of futurity, with the experience of the past and the light of the present, we may rationally conclude that the time is not far distant when there will be given to the profession a drug that will effectually reduce temperature, without any disorganizing influence on the circulating fluids, and without causing dangerous depression and collapse of the vital powers.

Such a remedy will not be a panacea, but it will be the ideal antipyretic.

Whether it exists ready formed by the vital activity of living vegetable cells to be revealed by the analyst, or whether it will be evolved from the complex problems of synthetic chemistry, he who first demonstrates to the world its true value will mark a new milepost in medical progress, and will have his name perpetually engraved on the imperishable tablet of humanity's gratitude along with the name of the discoverer of general anæsthesia.

THE KEYSTONE OF THE MEDICAL ARCH.

By T. S. McMullan, M. D.

THE rule usually followed by chairmen of sections I shall in some measure break. The purpose being to offer to your minds some suggestions why practitioners of medicine should have a more accurate knowledge of physiology than generally obtains, rather than to present an array of facts which most of us have had an opportunity of knowing whether we have availed ourselves of it or not.

In Physiology few facts of importance have been established.

Blood and Circulation.—An investigation by Lilienfeld has shown that the nuclei of Leucocytes and Lymphocytes contain a compound Neucleohiston, formed itself of two substances, which contributes largely to the coagulaton of blood.

When studying the effects of bleeding, Jona has deduced that the alkalinity of the plasma is at its maximum reduction in two hours and returns to its normal in about twenty four hours; and that about the seventh day after a hemorrhage the greatest activity is seen in the spleen and red marrow.

Experiments have shown that gravity is a cardinal factor in dealing with the circulation; and that in man the equilibrium is maintained by the splanchnic vasomotors. Consquently when this compensation has been distroyed or injured, position is important.

Mosso has described a sphygmonometer for determining blood pressue which promises to be practical and convenient for the general practitioner.

That an increased flow of blood through the muscles takes place during and after massage has been clearly proven.

Respiration.—That blood from an asphyxiated animal has more toxic properities than normal blood has been shown.

Nutrition.—It has been demonstrated that glycolysis (or distruction of grape sugar) is not dependent upon the presence of

the fibrin factors as originally supposed but is a function of the formed elements of the blood and is an act of oxidation.

Corvallo has proved that in some of the lower animals perfect digestion takes place, even when the stomach is removed.

Ductless Glands.—It has been made positive that the spleen is connected with the formation of red blood corpuscles, and that its removal in old people is attended by a very marked anæmia.

Oliver and Schafer contend that the supra-renal capsules contain a principle which aids in maintaining tone in the different kinds of muscular tissue; and that their removal causes general muscular weakness and vaso motor disturbance.

Central Nervous System.—It has been shown that the temperature of the brain can be raised 2 to 3 degrees above that of the blood by stimulation and excitement.

Mosso states that sleep is entirely a chemical phenomenon as the circulation can not become modified to any great extent before we can awake and think; thus contending that anæmia of the brain cannot be the cause but is only an incident.

It has been shown that a median vertical section of the cerebellum gives no results. So that it is plain that its functional connections are on the same side of the body; removal of either side causing marked incordination.

The only reference I shall make to chemistry here, Mr. President, is to call your attention to the almost countless numbers of new remedies evolved from the laboratories of the world, and to present a few tests to be used in urinalysis which have seemed to me worthy of remembrauce and use.

Ott advises the use of sulphosalicylic acid in testing for albumen; added either in crystals or in (30) thirty per cent solution it produces a cloudiness, even if the smallest amount be present.

Carres recommends the use of Resorcin as a reagent to determine the presence of albuminuria; both of these tests have been found to be more accurate than the ones heretofore in general use.

In regard to the qualitative tests for sugar, after using all that I have seen proposed, none have seemed so satisfactory in ordinary practice as Trommers or Fehling's and for quantitative analysis Whitney's is the most useful and practical.

The volumetric or Whitney's test is—a solution of amm. cupric sulphate of which one drachm is decolorized by $\frac{1}{30}$ gram of glucose. The urine added drop by drop upon boiling will, if sugar be present, decolorize the solution and by a carefully arranged table the quantity can be estimated.

I have been content, Mr. President, merely to enumerate some of the more practical advances during the past current year, and I shall leave to your leisure and your inclination the task of elaborating and to your research and knowledge the preference of believing or rejecting them.

The history of medicine began, Gentlemen of the Society, when Egypt was the queen of civilization; for we find it recorded in the book of Moses that the priests exercised the art of healing, and so attempted to solve the two greatest problems given to man since the world began; the salvation of the soul and the cure of the body.

The art was introduced into Greece by Chiron, and Hippocrates formulated the first system of treatment; that based only upon false deductions and dogmatic teachings. And so on down the ages certain medicines were given for certain diseases, not that their actions were understood, but because they had been supposed to have cured others; they had in those days scientists and teachers, but yet they were alike,

> "The bookful blockhead, ignorantly read,
> With loads of learned lumber in his head."

and medicine only began to be put upon a rational basis when in 1628 the discovery of the circulation of blood was given to the world.

It is said that great events occur in clusters; that the greatest minds shine together. It was during the great upheavals in England in the 16th century, amid the clamors of the people, when brother was arrayed against brother, when the church hurled its anathemas at the Puritans and the Puritans their denunciations against the church; when events arose, which terminated in the din of arms, that at Marston Moor shook the house of Stuart from the throne, that the great fact was given out that there were not four humors, as Galen had taught, but that there was one the "Elixir of Life". This discovery of a phys-

iological fact has revolutionized the practice of medicine and has made the name of Harvey immortal. From thenuntilnow, upon the researches made by physiologists hangs our ability too medicate. It is the keystone of the medical arch; the bed rock of our therapeusis, the knowledge of which has been the power which more than any other has driven out from civilization the heinous practices and belief in witchraft; and will be the power which more than any other in the days to come, as the laity becomes more familiar with the intricate and beautiful economy of man's make up,and learns to know that it is safe only under the guidance of one versed in these things, will sweep away all quackery and charlatanism. I should like to plead right here for a more urgent insistance by our physicians upon the importance of having our children instructed in this branch; it is essentially that science which belongs to both laymen and professional, the knowledge of its more exact details is for those, whose duty is to direct in their proper channel all those bodily functions which have gone astray; but its aquaintance with all men leads them to a heightened opinion of themselves and a more profound reverence for that mighty power to whom they owe their being.

Chemistry is the closely allied sister of physiology. The human body is one great intricate laboratory and life one series of chemical changes. New tissues are being formed and old ones, which have served their purpose and which for a time have made the cycle of life revolve are cast away. Upon these and upon the direction of these in the grooves marked out for them by the hand of omnipotenc hangs our hope of living in this world.

Mr. President, I trust I am free from cant when I say, that I do not believe that the author of this world will hold any man guiltless, who, with no knowledge of his handiwork and with only the purpose to impose himself upon unsuspecting sufferers for the sake of gain dares meddle with the health of His creatures, made in His image and into whom He breathed the breatn of life. No man at the present day can render as his excuse a lack of opportunity to know; if no other means presented the easy access which we have to the current medical journals would enable all of us to learn. Those of the profession in this state, who have their heart in the work of healing, should see to it that the people, so far as they can help it, shall not be made the victims of wilful neglect and preventable unfitness.

We have not yet reached the culmination of physiological research.

The day is coming when all of us will be able to have a nearer and better view of his and his fellowman's makeup;but because we see not the end let us not have less faith in our art, but require ourselves to see if, even in our limited fields we may not discern something which will add to man's hope of living.

The great in war have their monuments; the great in peace their honors; and the great in verse have had woven about their memories chaplets of praise wrought from their own sweet songs. But meagre has been the homage paid to keep fragrant the memory, and to keep green the graves of that army of men who have toiled and delved, that they might make, not themselves great, but us more able to cope with that enemy which was thrust upon us when Adam fell. Mr. President I have great faith in the future of our art, and I believe that the day has dawned which will give to the laborers in physiological science their meed of praise. And as the day grows older and the "Science of Life" more exact, we will hear the voice of the people say (except the great Arch enemy) "Medicine is King, Long Live the King".

MENSTRUAL DISORDERS.

By Annie L. Alexander, M.D., Charlotte, N. C.

MENSTRUATION is a physiological process and should be absolutely painless. To say that 90 per cent. of women suffer from some form of menstrual disorder would not be putting the per cent. too high. That this is true may be attributed, in many cases, to the so-called "higher civilization." Menstrual disorders, strictly speaking, can not be said to be a disease, but symptomatic of some other disease.

The most frequent disorders of menstruation with which we have to deal are: Dysmenorrhœa, amenorrhœa, menorrhagia and metrorrhagia, and the irregularities dependent upon the menopause.

Dysmenorrhœa is the most frequent of these disorders that I am called upon to treat. The disturbance may be so slight as to scarcely call for professional aid to relieve, or again the pain is so intense as to throw the unfortunate woman into convulsions. Many women are miserable for one week out of every four, frequently spending the time in bed.

Ovarian and periuterine disease frequently complicates menstruation but where the pain is due to diseased tubes, ovaries and periuterine disease, it is not dysmenorrhœa. Women with periuterine disease frequently have increased pain at the menstrual epoch, especially when they are up and about; this is due to the accompanying congestion and the influence of gravity, and not to the flow.

The menstrual flow, as is well known, is caused by changes that take place in the lining membrane of the uterus, and the pain that ensues is due to an inflamed or hyperæsthetic and indurated condition of the endometrium at or near the internal os, with more or less obstruction due to the induration, or flexion perhaps, at this point. In such cases the passage of the sound will cause the same aching pain felt during the menstruation.

The hyperæsthesia and indurated condition of the tissues so often found in cases of dysmenorrhœa is frequently the result of imperfect development and atrophy.

Flexions and displacements of the uterus do not of themselves cause dysmenorrhœa. I have seen a few cases of flexions so marked that it was almost impossible to pass a sound free from dysmenorrhœa. The majority of cases of flexion have dysmenorrhœa because of an accompanying hyperæsthesia. Dilate the cervix, cure the hyperæsthesia and the dysmenorrhœa disappears although the flexion remains. When the stem pessary is used, it not only relieves the dysmenorrhœa but straightens the canal and a change is brought about in the lining membrane which frequently results in a permanent cure of these cases. I have in mind a lady who suffered intensely each month. A day or two before each expected period, I inserted a stem pessary curved to fit the small retroflexed uterus. The hyperœsthesia was marked. She would menstruate comfortably, and then I would remove the pessary to replace it the next month. Each time I would have the stem a little less curved. After five or six months treatment she is well. The hyperæsthesia has disappeared and the retroflexed uterus is straight.

Dysmenorrhœa is more common among the highly educated and well-to-do classes than among the laboring classes. The cause is obvious. Among the poor, the sickly, delicate children die young. As the children of the rich reach puberty, the girls are deprived to a great extent of fresh air, sunlight and exercise and are compelled by custom to lead lives totally at variance with conditions best calculated to allow the proper development of their bodies. Just at this time they are in school and all their available force is used for intellectual work when the generative organs should be developing. Even when their hygienic surroundings are of the best and a good constition is inherited, if emotional and intellectual work is forced upon them when the generative organs should be developing, they will be likely to suffer from dysmenorrhœa due to imperfect development of these organs. Give these organs the best opportunity of developing by giving fresh air, sunlight, open air exercise, and at this period of life when a girl is passing into womanhood, do not allow her to exhaust her vital forces by

emotional or intellectual work and we will have fewer of these cases to treat. Bicycle riding is preventive and curative of this trouble in many cases.

In treating these cases I hesitate to examine young girls. After getting the history of these cases I order the best hygienic surroundings, fresh air, exercise, bicycle riding, (in selected cases) if there is no intermenstrual pain, diversion from intellectual pursuits. The medicinal remedies which have given me the best results, when the general health is not impaired, is Hayden's viburnum compound and Liquor Sedans. When this treatment fails an examination should be made. In many of these cases, a small undeveloped uterus with a long, hard pointed neck is found. I usually begin the treatment by using pledgets of cotton, saturated with a mixture of glycerine 15 parts and boroglyceride 1 part; these are applied two or three times a week, remaining 24 hours, followed by a vaginal douche as warm as can be borne. These applications cause a free watery discharge, and in two or three weeks the cervix is softened and less sensitive to touch and introduction of the sound. In many cases this simple treatment will relieve the trouble. In more obstinate cases it is necessary to dilate the os interium under strict antiseptic precautions and make an application of pure carbolic acid or tincture of iodine, the cervical protector being used. Usually two or three dilatations between the menstrual epochs are sufficient. Any acute inflammation of uterine or periuterine tissues should be relieved before resorting to dilatations. Where dilataion fails, divulsion and incision or modification of Sim's operation becomes necessary or even removal of the appendages to bring about menopause in some of the most severe cases.

Amenorrhœa may be caused in two ways; by debilitating influences on the general system; and by local disease or imperfect development or atrophy of the generative organs. During an active debilitating disease or convalescence, amenorrhœa is expected and desirable. In chlorosis and anaemia it is especially desirable. When menstruation exists with well marked anaemia it points to an abnormal condition of the endometrium, and we should bring out amenorrhœa by treating the local trouble. As the anaemia or chlorosis is cured, as a rule the menstruation

returns. When amenorrhœa exists after the general health is restored, local treatment should be resorted to, to prevent further atrophy and to stimulate the uterus and adnexa to complete development. We should examine into the history of the case with care to determine if the undeveloped hyperæsthetil uterus is due to congenital influences or to the influence of some debilitating disease or bad hygienic conditions during the period of development of the generative organs. Extreme mentac emotion, exposure to cold at the menstrual epoch, change of climate, a sea voyage, will cause a temporary suppression in many women. These cases are not so serious as the amenorrhœa of young women who use up their vital forces in intellectual pursuits to the detriment of their generative organs. These organs are the last to develop, and not being necessary to mental or physical work, they are the first to fail. One of the first indications of this trouble is delay in its appearance and suppression after it begins. This lack of development is the greatest cause of amenorrhœa, dysmenorrhœa and one great cause of the frequent lacerations of the cervix during parturition.

Almost all that is true of amenorrhœa is true of scanty menstruation and the treatment is similar.

Amenorrhœa may be due to absence of uterus or ovaries congenitally or by operation.

Treatment:—Little is gained by giving medicines except as they improve the general health and condition of the blood, as for instance the use of iron in anaemic and chlortoic patients. If the amenorrhœa continues after the general health is restored, special treatment is called for which is very much the same as used for dysmenorrhœa in the undeveloped uterus. Electricity applied regularly over the ovaries and to the cavity of the uterus stimulates development in some cases. Where pregnancy is suspected of course intra-uterine examinations are out of the questions.

Menorrhagia and metorrhagia as a rule indicate local disease or change in the lining membrane due to disease. As has been pointed out, amenorrhœa is the rule in certain diseases which change the condition of the blood. When menorrhagia occurs under such conditions a careful examination will show an abnormal condition of the endometrium, such as fungous granulations which will account for menstruation at all. Sometime

menorrhagia is due to some disturbance of the general circulation by mitral disease, pressure of large tumors etc.

Local conditions that cause menorrhagia are those in the uterus and those of the adnexa and periuterine tissues. In acute inflammation of periuterine tissues there may be menorrhagia or metrorrhagia; this flow often gives relief.

Myomatous fibroma and other tumors sometimes cause hemorrhage. It is not uncommon to find large fibroids of the uterus which do not bleed excessively at any time. In considering an operation for hemorrhage with existing fibroid, it is well to try curetting of the uterus first. Subinvolution, with granulations, especially after abortion, in many women causes hemorrhage. Sometimes we meet with cases where there is apparently no cause for the hemorrhage.

A young girl 17 years of age came to me for treatment. She was a finely developed country girl; had not exhausted her vital forces in emotional or intellectual work. The menstrual flow had continued for eight weeks. She had a previous attack five months ago lasting four weeks. She was put to bed, ergot was given and hot douches used without benefit. The hot water arrested the flow for two hours when it returned as freely as before. Examination showed a uterus normal in size and position, no hyperæsthesia, no granulations, no disease of adnexa. After dilating the cervix I swabbed out the uterine cavity with tincture of iodine, ordered a cold douche twice a day and gave liquor sedans. The flow became less immediately after using the iodine and in three days ceased entirely.

Cancer in women over 35 is the most frequent cause of metrorrhagia. On account of the importance of recognizing this disease early, it is the doctor's duty to insist upon a local examination as a means of diagnosis.

To cure menorrhagia or metrorrhagia, local treatment must be given in the most of these cases. Internal medication is rarely of benefit unless the general system is at fault. In a few instances I have found ergot combined with the fluid extract of hydrastis of value in controlling bleeding.

Avoid the use of tampons, they are generally more than useless. After having prepared the patient, dilate the cervix uteri with a steel dilator and with a sharp curette remove granula-

tions or retained placental pieces. The attending hemorrhage can be quickly controlled by injections of hot or ice cold water. I never use the gauze packing as I get better drainage without it and it is a very painful process. By cleanliness and antiseptics the danger in the use of the curette is reduced to the minimum.

Menopause.—A perfectly healthy woman, not having any local disease should cease menstruating without any general or local disturbance at about 45 or 48 years of age. It is generally believed by the profession and the laity that it is natural for women to suffer from hemorrhage and reflex nervous symptoms during the "change of life," and nothing is thought of it unless the woman's life is endangered from loss of blood or insanity is iminnent.

Premature menopause, that is coming before 40, may result from prolonged amenorrhœa after some debilitating disease resulting in atrophy of the generative organs. Removal of the tubes and ovaries does not always bring about the menopause.

If menstruation is too profuse or two frequent, a careful examination should be made. Fungous granulations and polypi are especially apt to occur at this time. Some women menstruate after they are 50; but if the flow is too profuse with nervous symptoms, hot flushes etc., if the cervix is dilated granulations or polypi will frequently be found, the removal of which will cause the menopause to come about normally. Dilatation of the cervix occasionally, will relieve the nervous symptoms.

MODERN OBSTETRICS.

By S. L. Montgomery, M. D. Concord, N. C.

THE time allotted me in which to read this paper will permit me only to touch upon some of the most important subjects engaging the minds and thoughts of the profession to-day, and while I view with pleasure and pride the rapid strides that have been made in the other branches of medicine, I feel that, with all the instruments and devices, the works of strong minds, the death rate in child bearing has not been materially lessened.

From the information I can gather on this subject, I find that we are only a few steps in advance of our fathers of fifty years ago. I do not deny that many lives have been saved by the modern Obstetrician, but who can count the number of mothers sleeping the everlasting sleep of death as the result of the indiscriminate and unskillful use of the forceps.

He who applies the forceps simply for the sake of saving time places time above the life of a mother and her unborn child. I know that it requires patience to sit and count the stars through the cracks of a log cabin when we have calls urging us to the palace, but the physician who would neglect the cabin for the palace deserves an everlasting abiding place among the demagogues, who imposed a tax of ten dollars upon us for caring for and serving the poor and distressed of the hovels.

A source of much harm, in my opinion, being practiced to-day, is the vaginal douche. Prof. Lusk, according to modern medicine, expresses himself as strongly opposed to the vaginal douche, before and after parturition.

While the vaginal canal abounds in micro-organisms, he considers that they only intensify the acid reaction of the vaginal secretions, and render the latter especially unfavorable to the multiplication of the streptococcus, said by many to be the germ that produces septicemia.

The normal vaginal secretions furnish a soil hostile to all forms of cell growth. The cervical canal of the pregnant woman is protected from the invasion of micro-organism by a mucous plug, and thus in natural labor the protection of the uterine cavity is complete. The entire parturient act furthermore serves to guard the woman against infection.

With the rupture of the membranes, the downward current is produced by the escape of the amniotic fluid.

The descent of the child cleanses the vaginal canal, and the increase of the vaginal secretions is inimical to the action of the septic germ. Finally, the passage of the placenta completes the toilet of the vagina.

The fact that nature provides this excellent means of self-defence clearly shows that the disturbing method of disinfection employed before and after labor, under the plea of prophylaxis, is not commendable. The anti-septic douches dissolve the mucus, set free imprisoned germs, weaken the resistance of tissue, and contribute to the extension of the source of infection. Meddlesome mid-wifery is wrong in every case in which it is practiced.

Are the forceps used many times now where they were used very rarely years ago? I think so, and would ask you if the comparative results justify this use.

Are there not other means to alleviate the pains of the parturient woman, and assist nature in her efforts to complete the labor,—other than forcibly dragging the child into the world, often before the parts are ready for its passage, the only excuse being that labor lasted twenty four or thirty six hours? Are we not making too frequent examinations? The conditions having been ascertained to be normal, diagnosis of position made, and degree of dilation of os known, is it necessary to annoy and often endanger the health or life of the woman by frequent examinations, often prompted by our own impatience?

Are we not rupturing the membranes too soon, and are we not leaving our cases in the care of nurses, telling them only to send for us when they are sure of a speedy completion of the labor. Is this not leaving them to act for us, and by our commands, one of the worst forms of meddlesome mid-wifery, as they can only ascertain what we require them to know by unskilled frequent examinations?

The second stage completed, are we not in too great a hurry to cut a pulsating cord, and forcibly express the placenta, or introducing the hand to remove it?

Would it not be more scientific to wait a reasonable time for its separation and expulsion, and allow nature to complete the third stage as well as the first and second?

Is not any interference with normal labor, or any other, aside om assisting nature should she flag in her efforts towards its completion, unless demanded by threatening danger to the mother or child, meddlesome mid-wifery?

Are we not, in our great haste, losing sight of our obligation to consider the interests of the mother and child as paramount to all others, no matter what outside interests suffer by our detention by the bedside? From the time we enter her room, and take charge of the case, our duty is to her and her unborn child only, and needless hurrying the labor or leaving too soon after the birth of the child, violates that obligation. I remember, about two years ago, I was called to attend a young woman in her first confinement. I reached the home about one or two o'clock in the morning. The labor, which was a normal one, lasted about seven hours. I left in a few moments, being in a hurry to see some other patients, but just as I was leaving, the woman remarked that she was having a chill, having had two or three chills before her confinement. I paid little attention to her remarks, thinking probably she had a nervous rigor, or a malarial chill. I saw her husband on the streets about four or five hours after leaving his home in the morning, and he told me that his wife had a very high fever from the chill. I went immediately to see her, and found her with a temperature 104½, pulse 130. I gave her an antipyretic, called at 8.30 o'clock next morning and found her temperature 104, pulse 120, small and weak. I began to think seriously of my diagnosis. Was it malaria or septic, or both?

If septic, from what source did it come?

I washed my hands with soap and water, which I generally find sufficient. If septic, why in such a hurry, for she had the chill before I left the house, which was not exceeding fifteen minutes after the birth of the child?

Until this day I have never been satisfied thoroughly as to the

diagnosis of this case. The woman recovered after a hard struggle of three weeks. At my morning visit on the fourth day, I found slight tympanitis with acute tenderness over the entire abdomen. I also found a scant and very offensive vaginal discharge. Had I remained with this woman one hour, the result of course would have been the same.

But suppose the case had been one of post partum hemorrhage, the woman would have been dead, in all probability before a physician could have been secured.

My duty was at the bedside of that woman, and I should have remained there the proper length of time.

Only a short while ago, I was called to see a woman in her tenth confinement, and her sister in giving a history of the case, said the patient had been passing large clots of blood for several hours. In making my examination, I found the os patulous, but not dilated. Pains had ceased.

I remained for a while, the pains not returning, and no clots passing, I went to my office leaving instructions with the family to call me when the pains returned or more clots passed. I was recalled in about five hours, found the woman with strong frequent pains, and most alarming hemorrhage. Examination revealed the os dilated to the size of a free silver dollar. Assisting nature with my thumb, index and second fingers, dilatation was soon complete.

I ruptured the membranes, the head came down, and the hemorrhage ceased at once. Labor was completed in a short time, the child dead. The woman rested quietly for twenty minutes, when she was seized with violent pains again.

Having previously satisfied myself that another fœtus had not been left in the womb, and the pains being too severe for after pains, I was at a loss to know the cause of these pains, and in making my examination for this purpose, my hand came in contact with a great mass of something I knew not what. I carried it to the rear yard, and found it to be a blood clot four inches in circumference and six inches in length. Why that clot was not expelled with the placenta, I am not able to say. Had I left this case as soon as I did the one just reported, I should have felt that my entrance to that home again would have been a just cause for the wrath and condemnation of that family forever,

I hope no member of the Society will think me opposed to any means known to obstetricians when we have to resort to such measures to save life. On the other hand I think it the duty of every physician who practices obstetrics to face and meet any danger that may confront him, and he who is able to do this has accomplished for himself a name that will be sung by fathers and mothers throughout his country.

We all know that there hangs upon us a heavier responsibility in obstetrics, than in any other branch of medicine.

The eye not only of the family, but the neighborhood is upon us, and if the patient passes away, notwithstanding we feel ourselves competent, and know that we have done our full duty the death of the woman is laid at our door.

We should, however, console ourselves with the fact that there is a higher and better reward than reputation, that is, the consciousness of duty performed.

Let us go forward then, doing our duty, "holding fast to that which is good," despising empiricisms, relieving the suffering, driving back the death angel, and when we shall pass away, though no temple may be erected to us at Egidaurus, your name and mine, "will escape the consuming conflagration of reproach."

PRACTICAL RESULTS IN THE DIAGNOSIS OF CONTINUED FEVERS FROM EXAMINATIOM OF THE BLOOD.

By H. A. Royster, A. B., M. D., Raleigh, N. C.

AT the last meeting of this Society, I had the honor to lead in a discussion concerning the existence in North Carolina of a third form of continued fever other than typhoid or malaria.1 My tentative opinion there expressed was that the largest number of the obscure cases were probably mild types of typhoid, while I insisted strongly on the necessity for blood examinations in the settlement of the question. I have not seen fit to change my views on the subject, but rather to have them strengthened by continued observation. In the light of further experience I may assert that I do not believe that there exists in North Carolina a third form of continued fever, but that all our febrile conditions, which are of sufficient length to be called "continued", are either typhoidal or malarial in origin.

Of the doubtful border-line cases, many are atypical typhoid fever; some are cases of malaria in which no blood-examination has been made.

Turning aside from this question for the moment and leaving it open for further investigation, I wish to record, as bearing somewhat upon the matter, the results of examination of the blood in over thirty cases of continued fever observed since my preliminary paper was read over a year ago. In the examination which forms the basis of the statements contained in this report, every one of the cases which gave a negative result as to the plasmodium proved in the end to be typhoid fever. Those which showed the parasite were found to correspond clinically to malaria and were cured by quinine.

The method used in examining the blood is very simple. The necessary apparatus is carried with me in a small hand case, containing several glass slides and cover-slips, a wad of absorbent

cotton and a stoppered tube of alcohol. A small pair of dressing forceps and a bistoury are always in my pocket case. The blood is drawn preferably from the lobe of the patient's ear. After washing well with alcohol the point to be punctured and allowing it to dry in the air, a slide and cover-slip are prepared in the same manner and then rubbed very vigorously for a few minutes with a clean linen handkerchief, being careful not to touch their flat surfaces with the fingers afterward. The skin is then pricked with the point of the bistoury and the blood allowed to ooze out, squeezing the part being avoided. The first drop is wiped off with the linen and, as another drop accumulates, it is caught on the glass cover which is held by the forceps immediately in contact with the blood, not the patient's skin. The slip is then inverted and allowed to fall upon the glass slide without pressue, so that the film of blood spreads out smoothly and evenly. It is then ready for examination and will remain fresh for an hour. For the most satisfactory work a $\frac{1}{12}$inch oil immersion lens is needed, though lower powers can be used.

I have had no experience with staining methods in the study of the plasmodium. All my work has been done with fresh specimens taken from patients in both hospital and private practice, some of whom were scattered widely apart. There has been no attempt on my part to go into an exhaustive study of the malarial parasite. This is being done and will continue to be done by men who are more able, better equipped and have more time for the work than I could devote to it. It is an interesting field for research, especially the question of the association of certain forms of the protozoa with certain types of fever. I have left all that out in my work save in a casual way. My energies have been bent chiefly toward putting into practice a method by which we may in the very beginning of continued fevers either determine the existence of malaria beyond a doubt or exclude it from the diagnosis altogether. As soon as I am called to a patient with fever, after taking the history, I invariably examine the blood before giving my opinion. If I do not find the plasmodium, I re-examine the second and, possibly, the third time and, failing then to discover it, I conclude that the patient has not malaria, taking into account every symptom in minutest detail. This is a sufficient contra-indication to the

administration of quinine and, according to my views already expressed, is evidence that the patient has typhoid fever. The presence of the plasmodium, of course, means malaria, relying again on the clinical history as far as it goes. Widal's serum test for typhoid, when it comes into more general use, is likely to simplify this whole question. In this report, the diagnosis made by blood examinations gave positive indications for treatment which were successfully carried out in each instance.

It is not deemed necessary to read before you full records of all cases. Only three have been selected, as illustrating distinct types in which examination of the blood is essential to accurate diagnosis.

I. William H., age 10(?) years visiting in Raleigh last summer from a town in eastern North Carolina. His fever came suddenly, with a chill, the temperature rising rapidly to 105°F. and over. There were no prodromal symptoms of typhoid. Three examinations of the blood failed to show the plasmodium. Sponge baths were given and eliminative treatment for enteric fever begun. In a few days the temperature was pursuing a steady course and delirium, diarrhœa and rose spots developed. The little patient, under the care of another physician, went through a typical attack of typhoid fever and recovered.

II. M. C., girl 8 years of age, native of Wake County, had symptoms suggestive of neither typhoid nor malaria, but was brought to me by her mother who said that her daughter was "run down" and had been for two months. They had just returned from a visit to the country. The child's temperature was found to be 101°; skin pale; no special symptoms. Blood showed malarial parasites. Patient was cured by two grains of quinine every 4. hours, followed by arsenic. This case is one of many in which sub-acute or chronic malarial infection is, no doubt, responsible for conditions of so-called nervous prostration, etc.

III. This case was one which began rather like typhoid, though the patient, Miss M. B., a young lady of 18 years, was a resident of one of our eastern counties, and was in Raleigh only for a short time. The attack came on gradually, with aching in the limbs, headache and nose bleed; followed in four or five days by slight chilliness and fever which ran up to 103°

and 104°F. Five grains of quinine sulphate every 4 hours plenty of water to drink and sponge baths to insure patient's comfort. Recovery. Duration of fever five days after treatment was begun.

In conclusion, I desire to emphasize my belief in the following statements:

1. Our continued fevers are either typhoid or malarial.

2. The first step in their diagnosis is the finding or excluding of the malarial parasite.

3. This can be done readily and satisfactorily in the manner indicated.

DISCUSSION.

Dr. O'Hagan: Dr. Royster's paper I regard as very valuable, inasmuch as it has shown almost invariable tests for arriving at a correct diagnosis of fevers which are very often obscure. Old medical fossils like myself will hardly take up these instruments of precision at this late day, but clinical experience directed me to that test, the use of quinine to make up a differential diagnosis. I have long since come to the conclusion that there are but two fevers, and they are malarial fever and typhoid fever. This mongrel type which was named by Dr. Woodward typhoid-malarial fever, I have long since failed to notice in any way whatever. Dr. Royster's paper has given you the technique of making differential diagnosis absolutely certain, which will save time and enable you to initiate the proper treatment for the special fever, whatever it may turn out to be. As long ago as I can remember having a case of this fever when I gave quinine for four days and the fever did not subside, I at once determined the case to be typhoid fever. Some of the symptoms are frequently absent; epistaxis is absent, tympanitis is absent; there are no means to verify it except a post mortem examination, which is unpleasant and unsatisfactory. But I must confess that I am indebted to these gentlemen here for simplifying the method of diagnosis. I regard this as of exceeding value to men in making an accurate diagnosis. It will save the patient from swallowing a vast deal of physic. We are indebted to Dr. Royster for a very valuable paper, and not the less valuable because it is short and to the point. He gives you the very kernel of the nut, and makes the matter so plain that the wayfaring man, though a doctor, my understand and not err.

Dr. Duffy: I would like to say that I think Dr. Royster's paper a most important one, and that we are very much indebted to him or any one who will so simplify the matter of making a diagnosis between these two fevers. Last year I was very interested in the discussion as to whether there were more fevers in North Carolina. I must say that I was about as much pleased with what was said on one side as on the other. Like other persons who have had much experience with fevers, I was on the anxious bench to know whether it was the one or the other. I could hardly subscribe to the doctrine, although I felt perhaps more inclined to it than I have heretofore, that we could rely on quinine as a test even after thoroughly cinchonizing my patients, not only as a matter of therapeutics, but as a diagnostic test. I had a case not long since, a little patient who died. Began with a high fever, no prodromes, except some few weeks before had some symptoms of acute articular rheumatism, which only helped to obscure the diagnosis, and make me more in doubt. The fever was constant and high. Her mother said she had been better and eating more just before the attack of fever than she had in a long time. Yet she was taken suddenly with a high temperature, which nothing would keep down long. There was no step ladder coming up of the fever such as books tell us of at all. I watched every day for the eruption, and there was never any that we could see at all characteristic. After that had gone on about a week, because quinine had no effect on it, a careful examination of the lungs showed no lesion, and no special symptoms of any thing else, I said to the friends that I regarded it as typhoid fever. I had a consultant and he agreed with me. It was only a few days before the patient had violent and copious hemorrhage from the bowels and died. I suppose there was no doubt at all but that we hac true typhoid lesions and perforation of the intestine. But if all such cases could be subjected to the microscope for examination, and a diagnosis of typhoid fever postively made, and the patient not subjected for several days to profound cinchonism, which seemes to be harmful, we have certainly made a great stride. I wish to say in reference to the exclusion of malarial fever by the quinine method, cinchonizing the patient, and if the fever continues regarding it as non-malarial, I have

charge of the Marine Hospital Service, at New Bern and I have patients who come to see me from off the rivers, and occasionally I get hold of a man who comes to me looking pale and you might say the picture of malarial infection. He has a big spleen, he has had numerous chills, not only last fall, but he has had chills year in and year out. The kidney secretions turn dark brown, almost black with heatand nitric acid. I have had these men in the hospital where I could watch them every day, and we would send them out and they would come back with a little fever. I have watched them until the hospital sixty days were out, and in one instance I had a man transferred to the Wilmington hospital and had him to come back from there with still a little fever. He had taken quinine and Warburg's tincture, which is a strong solution of quinine with other things, iron, and almost everything else that I could think of that would be likely to be of service to him, still he had fever. You cannot wonder that I should be skeptical of the diagnosis of malarial fever with quinine.

Dr. Parrott: Dr. Duffy's remarks recall to my mind experience along this line which I had while in Louisana. We had a great many patients in the hospital from the Central American States suffering with remittent malaria. A great number of these cases, after they recovered from the acuteness of the attack, remained in the hospital because of the low form of the fever, ranging from 99 in the morning to 101 in the afternoon. I have seen them go on in this way day in and day out for six months. I have had a great deal of experience along this line. An examination of the lungs and sputum showed in a number of these cases a form of incipient tuberculosis, the pulmonary organs in a majority however being entirely clear and in a healthy condition. In a few of these cases I found either a form of dysentery, hepatic abscess or a pre-existing malarial cachexia. In the vast majority of cases however I had to contend with simply a low form of fever, called down there "continued fever." It is very fatal, wearing the patient out because of its long continuance. In 1895 I instituted a series of experiments based upon Prof. Elliot's theory concerning the diathesis. I based my investigation on the fact that the whole human race could be divided into diatheses and tnat prominent among them was the

"gouty" class. Nearly all these patients with these low fevers had the gouty diathesis and I obtained wonderful results when I went back ofthe fever and attacked the constitutional trouble. The gouty diathesis lends very material aid to "combustion" and "acid productions" in my fever theory, which is as follows: malarial germs as other poisonous elements increase tissue destruction. This takes place back in the extra-capillary tissues and means of course oxidation. The products of oxidation are acid and therefore there is lessened alkilinity outside the blood vessels. By the law of osmosis these acidised fluids pass into the blood (it being strongly alkaline) and diminishe alkalinity. This in turn reacts upon the thermic centers and causes more fever developments. You now readily see that in all these cases we will surely get splendid results from the judicious use of alkalies.

Dr. Murphy: I want to say a word about auto-infection which perhaps has some bearing on this subject. These poisons whatever they may be, ptomaines, urea, or other excrementious products, have a profound effect on the mind, frequently producing great mental disturbance. All of us have seen children with high temperatures coming on suddenly after some error in diet which are completely relieved by a cathartic. In ephemeral fevers constipation is present and in these cases, as in children the symptoms rapidly subside after the bowels are freely moved. It may be that this may account for some obscure fevers. The experience of Dr. Duffy makes me think that an excess of uric acid in the blood may produce elevation of temperature just as other poisons that I have spoken of above, this without other signs of gout. I know the mental symptoms of chronic narcotic drug poison are quite similar to those of auto-infection.

Several cases of insanity from grip I saw had similar symptoms.

A case I saw in consultation whichhad many signs of tumor of thebrain, in fact the diagnosis of tumor had been made by someof the best medical men in the State, made a rapid and complete recovery after the narcotic drugs he had been taken for some time, were withdrawn. I should like to hear this part of the subject discussed further by the gentlemen present; I want to know something of it from a general practitioner's standpoint. For several years psychiatrists have been studying it and

its influence on the brain, it may have effects on other tissues of the body.

I saw a case of what seemed to be mild mania with some stupor in a gentleman 77 years of age which seemed to me from the history of the case with the symptoms to be one of auto-infection. We found on examination of the urine a small quantity of albumin with some granular casts. The sp.gr. about 1020, urea normal in amount but the whole quantity of urine passed was much less than it should have been, thus showing a diminished quantity of urea excreted. Lithia water was prescribed, not that any effect was expected from the lithia, but the normal effect on family and nurses would more likely cause them to administer this "mineral water" more freely. This gentleman soon recovered his mental faculties and is now in his usual health. These poisons, ptomaines, urea, etc., as I have said, have some symptoms of narcotic poisonings. I have been surprised to find of late years since a more careful examination of the patients admitted in the State Hospital have been made to find how very many of them have albuminous urine. Further study of all this will no doubt enlighten us all.

Dr. Parrott: I would like to say that Prof. Elliott instituted a series of experiments in regard to the drinking water, and found that in several of these cases that as soon as filtered or boiled water was used, the fever discontinued, showing to my mind that in treating this fever we killed the germs, but at the same time gave the patient another dose of malaria in the drinking water.

Dr. Crowell: This is very interesting to me for several reasons. The first examination of the blood gives us a positive diagnosis, and we know what we have to deal with. We know that there are some cases where quinine does not destroy the plasmodium of malaria, and by this examination, we know at once how to treat it. We all know that the earlier we know that it is typhoid fever, the better it is.

Dr. Royster: The discussion has wandered somewhat, but as the president has said, it is an informal one. I have only two or three things to say in closing the discussion. I want to call attention to something Dr. Duffy said, and that is that typhoid fever often begins like malarial fever clinically in children. The

prodromes are frequently absent, the fever begins suddenly and runs high, sometimes with a marked chill, and there is not a physician in the world, who would not say that such a case was malarial fever; but if he subjected it to a microscopic examination and found no plasmodia in the blood, he would not. If you find the plasmodium absent, you conclude that your patient has typhoid fever. On the other hand, you find in some adults a fever beginning exactly like typhoid fever, with prodromes, no chills, steady fever,—continued. An examination of the blood in cases like that sometimes shows the blood swarming with plasmodia; you give quinine, and the patient gets well. I feel that such discussions are interesting, and I am grateful to the gentlemen who have engaged in the discussion this morning.

Dr. Hays: I would like to ask Dr. Royster if he has ever found the plasmodium of malaria in a case which afterward turned out to be a typical case of typhoid fever, i.e, if he has ever found the plasmodium and baccilli together. I have seen a number of cases starting with a high temperature, raging headache, not influenced by quinine. We give quinine, and if they have malaria, it runs its course and then the typhoid develops, or that which the profession called typho-malarial fever, or bilious fever, and I must confess that I am at sea as to what they really are. I would like to know if he ever found the plasmodium of malaria in these cases at first. I know that in the end the typhoid fever symptoms are there, and you remember the remarks of Dr. Booth. In about 100 cases in the hospital, four or five were typical cases of typhoid fever. I believe that these were all due to the same thing, and that is to the drinking water. It was found to contain bacteria, and the water was changed and the case of fever stopped. In my opionion, they were all typhoid fever, though I have never been able to persuade Dr. Booth that that was the case.

Dr. Royster: In answer, I will say that in my work of examining the blood in cases of continued fever, I have never found an association of the two germs. As I said in my paper, whenever I found a negative result as to the plasmodium, it proved to be typhoid fever; with a positive result, it proved to be malarial fever and was cured by quinine. In Johns Hopkins Hospital, in over 600 cases under examination, in only one was found an association of the two infections.

THE MICROSCOPE IN DIAGNOSIS OF MALARIA.

By R. H. Whitehead, M. D., Chapel Hill, N. C.

MY excuse for offering any remarks upon so trite a subject as the diagnosis of malaria is two-fold. In the first place, I believe that the discovery that malaria in all its manifold manifestations is invariably accompanied by the presence of an animal parasite in the blood marks the most important advance which has been made in clinical diagnosis for many years; and second, I am convinced that many of us, perhaps the majority of us, are neglecting a very valuable means of diagnosis. While, as a rule, the diagnosis is easily made from the symptoms alone, yet there are many cases in which the clinical symptoms leave us in doubt, puzzling cases which all of us who practice east of the Blue Ridge occasionally meet; cases which would cause us much less worry if we were only certain that they were "nothing but malaria." On the other hand, there can be no doubt that many cases of disease are incorrectly considered malarial. Many a case of incipient tuberculosis has been diagnosed and treated as malaria, many a case of syphilitic meningitis has been termed brow ague, and many a case of septic infection has gone to the grave with the diagnosis of malaria.

With our present knowledge, such mistakes need no longer be made. We may with confidence rely upon the fact that if the case be malarial, the parasites are in the blood, and a careful search will find them.

Of course there are many of us who have not enjoyed the benefits of the microscope, but there are others who are familiar with that instrument, but who yet seem to think that the microscopic examination of the blood is a sort of diletant procedure on which hospital internes may while away superfluous time, but that it is of no practical use to the "busy practitioner." Others fear lest the technique may be too difficult, or require

too great an outlay of time, etc. On the contrary, nothing could be more intensely practical, and it is to the "busy practitioner" of all men to whom it is most useful, nor need fear of difficulty of technique deter any one who is familiar with the microscope, for the method is simple and the detection of the parasites is in many instances easy. I need not here attempt to give any description of the parasite nor discuss the question as to whether its different forms are connected with different types of the disease, for the detection of any form is sufficient to establish the diagnosis; but it is well to emphasize the fact that the small intra-cellular variety, (aestivo-autumnal) which is very easily overlooked, seems to be the causal agent concerned in the production of the severer and irregular forms of the disease. In the most intense cases of malarial infection we may have to search very patiently and carefully before we can find these small organisms. To all interested in the subject, I can not too earnestly recommend the Fifth Volume of the Johns Hopkins Hospital Reports containing the study of over six hundred cases of malaria by Thayer and Hewitson. It is exhaustive of the subject, and the paintings of the parasites by Mr. Max Brödel, the artist to the hospital, are alone worth the price of the book, so true to nature are they. Since the method of examination seems to be not generally known, I shall describe the one which I have found most satisfactory. In the first place, we may say that an oil immersion $\frac{1}{12}$ objective is necessary, although the discovery of the parasite by Laveran was made with a $\frac{1}{6}$. Perfect cleanliness of the slides and cover glasses is absolutely essential; to obtain this, it is well to boil hem in a weak solution of sodium bicarbonate, rinse off ui water, and then wash them in alcohol. They may be kept in alcohol, or, after drying well with a clean cloth, may be preserved dry for future use. The blood may be best obtained from a slight puncture of the lobe of the ear. Pinching up the lobe between the thumb and index finger of the left hand, after having first washed the lobe well with alcohol, the puncture is made with a clean needle. Gentle squeezing will cause a drop of blood to appear, which is wiped away. A second drop being forced to the surface, the cover-glass, held in forceps, is gently touched to the top of the drop. A small drop of blood adheres

to the cover-glass, and when the latter is laid gently with drop down on the slide, spreads out between the slide and cover glass into a thin layer one corpuscle thick. It is now ready for examination and the corpuscles will preserve their shape for a half an hour. If one wishes to preserve the preparation longer, a little melted paraffin may be edged about the cover-glass, and in this the blood will keep fairly well for several hours.

As I have said, the method is simple, but it requires a little practice, and careful observance of the steps just described in order to do it nicely. If the glasses are not perfectly clean, the blood will not spread; under such circumstances, we should not press upon the cover-glass and so spread the blood by force—for by so doing the corpuscles would be disturbed, and misleading appearances be produced. It is best to hold the cover-glass with forceps, for the moisture from the fingers may soil it. Only a small drop of blood must be taken, for a large drop will not spread sufficiently thin.

In such preparations the larger varieties of the parasite are readily detected, but the small aestivo-autumnal forms may be easily overlooked, or confused with artificial appearances in the blood corpuscles. It is, therefore, well in doubtful cases, to stain the organisms. This may be done as follows: The blood is obtained on a cover-glass in the way just described, and is allowed to spread by being placed upon another cover-glass. The two covers are then slid apart, and the thin layer of blood which remains adhering to each is allowed to dry for a moment or two in the air. and then fixed by immersion in equal parts of absolute alcohol and ether for half an hour. The layer of blood is then stained for one minute in a concentrated solution of eosin, marked, and stained for another minute or two in a concentrated solution of methylene blue. It may then be placed upon a slide and studied. The red corpuscles are stained red by the eosin, while the nuclei of leucocytes and the parasites are stained blue. While my own practice is a very limited one, this method has been several times of great assistance to me. For example, early last fall four cases of fever developed at the University at about the same time in four students from different parts of the State, all bearing a close likeness to typhoid in its early stages. After a week or two of prodromes, including nose bleeding, a temperature of 100°F. would be noted grad-

ually rising without remissions to 103° or 104° by the fourth day. But the microscope showed the presence of the small intra-cellular parasite in each case, and after five grains of quinine had been taken every four hours for five days, the fever ceased.

Here in North Carolina we should be especially interested in this subject. We hear much about typho-malarial fever. If there be such a disease, that is, one in which the malarial and typhoid parasites occupy the same host, then the microscope should find the malarial parasite in the blood. In this connection it is interesting to note that out of the large number of cases of typhoid fever treated at the Johns Hopkins Hospital, is only one case were the malarial organisms found.

We should be still more interested for another reason. For many years there was a standing prize offered by a member of this Society for an original article on Hemorrhagic Fever. That prize, I believe was never awarded. Right here in our midst is a golden opportunity for somebody to make a valuable contribution to medical science. The microscope alone can disclose the secrets of this disease, of course the study of its pathology demands much more than the microscopic examination of the blood and urine. The liver, spleen, kidneys and brain of fatal cases must receive careful study. I should be under obligations to anybody who would send me small portions of these organs. They should be preserved, not in alcohol, but in a solution of potassium bichromate, ten grains to the ounce of water, to which it would be well to add five grains of sodium sulphate. My own observation of hemorrhagic fever has been limited to two cases; one occurred several years ago when I was unable to study it. In the other case the small intra-cellular form of the parasite was present. The urine, although of a deep blood-color, contained no blood corpuscles. So that this case at least, was malarial and the blood color of the urine was not due to hemorrhage from the genito-urinary passages, but was due to the coloring matter of broken down corpuscles, set free in the blood and eliminated by the kidneys.

DISCUSSION.

Dr. Hines.—While the microscope is doubtless an accurate method of diagnosis, the physician should learn practical diagnosis at the bedside and not depend on the microscope.

Dr. Anderson.—I agree with the gentleman in regard to the clinical diagnosis of these fevers, but I do not agree with him when he says that there is too great a tendency to depend on the microscope in the diagnosis of malarial fever or typhoid fever. I say the tendency is not sufficient. I know that in my own practice and in the practice of some of my fellows, we have had cases where we didn't know whether we had typhoid or malarial fever. I wish the tendency greater in Wilson to use the microscope. I want to make a statement from a letter which I received from Dr. Pate. Dr. Pate writes: "I have been using Wyatt Johnson's modification of Widal's serum test for typhoid fever for the past seven months—have examined 22 cases diagnosed clinically to be typhoid fever with the following results, viz: Agglutination occurred in sixteen of these cases within the first week.

Agglutination failed in one case within the first ten days, whose subsequent clinical history indicated typhoid fever—was not tested later. Serum test negative in 4 cases. In all of these the malarial parasite was present and yielded to quinine in 10 to 14 days. The remaining one case was that of a young man sent from town to his country home by an able physician with a clinical diagnosis of typhoid fever. The serum test was negative. An examination for the plasmodium of malaria was also negative. Made a culture from a moderately inflamed pharynx, from which he had suffered since his illness, and found streptococci. His temperature was normal after 48 hours—antiseptic local treatment—ten days from the time he was taken. His continual rise of temperature and nervous symptoms were all due to the streptococcal sore throat." There would have been a serious mistake if he had relied on clinical diagnosis alone.

Dr. Hines.—Typho-malarial fever was a name invented and given by Dr. Woodward. He thought that there was such a fever, but before he died he admitted that he had made a mistake, and said that he was confident that there were only two distinct types—typhoid and malaria. He invented the name, but demonstrated the truth that there was no such fever. In a microscopic test in New York the doctor proved that a man could have typhoid fever and after the recovery from the symptoms, have regular malarial fever. The reason that it is thought to be a separate fever is because a man can have the two fevers

entirely distinct. The doctor seems to have misunderstood me. I said that the great majority of the physicians must not depend on the microscope. You must, it seems to me, examine a man thoroughly, examine him so thoroughly at first that you would not have to examine the blood to find out what he had.

Dr. Whitehead: I want to say this in defense of my paper. I think we all want to do what is best for our patient, consequently we use every means to make a diagnosis. If we rely on clinical symptoms alone, we are bound to make a mistake. My paper was not written from any knowledge of books; it was written out of my own experience. I know that it is not a hard thing to do, and that it does not require any great knowledge of the microscope to do it.

AN INTERESTING CASE OF APPENDICITIS.

By A. J. Crowell, M. D., China Grove, N. C.

THIS report is not submitted on account of the recent discovery of this disease or in support of some new line of treatment, but to impress the paramount importance of an early diagnosis, and the good that may result therefrom, even under the most adverse and hopeless circumstances. The case which I refer to is as follows:—John L. Oct. 24th, white, occupation, farmer. Father died from fracture of skull. Mother living and in good health. Three sisters and one brother living, all of whom are in good health. No hereditary history. On the evening of Feb. 11th patient complained of uneasiness in bowels and took pills which operated the next morning. In the afternoon of the 12th, he was seized with pains in the right iliac region which radiated over the entire abdomen, and began to vomit which continued more or less until after the operation. Dr. McW. was called about 9 p. m. and found him in the following condition:—expression anxious, suffering excruciating pain in the right iliac region which radiated to all parts of the abdomen. Legs flexed and abdominal muscles in tonic condition with exceeding tenderness, throughout abdomen. Tongue furred, temperature 101° pulse 120. Satisfactory examination could not be made on account of extreme abdominal tenderness, but deeming it a case of hæpatic colic, Dr. McW. administered ½ gr. of morphine, hypodermically, with directions to give oil, followed by enemas if necessary, and to use turpentine stupes over right iliac region. The oil was not retained.

Early the next morning the Dr. returned and ascertained that the patient had rested but little during the night.

Temperature was 120° pulse 130, muscles in tonic contraction, and pain still severe. Tenderness marked in right iliac region. One half gr. of morphine was again given. Enemas of oil and glycerine were administered with a long tube a number of times

without any result. At 3 p. m. another ½ gr. of morphine was given. At 6 p. m. the patient felt his bowels give way, as he expressed it, and thought he would have an action. Temperature declined rapidly to 97⅘. Pulse became weak and thready and patient was soon bathed with perspiration, which indicated collapse from perforation.

On morning of the 14th the writer was called in consultation and found patient somewhat recovered from shock, but had every symptom of an acute attack of peritonitis.

Pulse 130. Temperature 101½° with a great deal oftympanitis, and abdominal tenderness was so marked that it was impossible to make a satisfactory examination without the use of an anæsthetic. Under an anæsthetic a small tumor was found in the region of Mc Burney's point, and diagnosis of appendicitis with peritnoitis was made. Immediate operation was advised. Having no instruments or sterilized dressing with me, I returned home for instruments and dressings while patient was being prepared for operation. On my return at 4 p. m. I found they had been unable to get any assistance on account of neighboring physicians being absent from home. Deeming immediate operation very important, instruments and towels were boiled, patient, anæsthetized and operation begun. An incision about four inches long was made, commencing about one inch above a line drawn from the anterior superior spinous process of ilium to the umbilicus parallel to and just to the right of the rectus muscle avoiding the sheath of the rectus as hemorrage is usually qreater when incision is made through the sheath. On reaching the peritoneum it was seen to be highly inflamed, and when incised a large amount of seropurulent fluid, which was very offensive escaped from abdominal cavity. Further examination showed that the intestine, omentum and peritonum were all in a state of high inflammation and adhered together. It was then seen beyond a doubt that there was a general septic peritonitis. Hence the rush with the operation and the crudness with which it was done. The adhesions were broken up and the appendix reached. It was about 5 inches long, very much enlarged, perforated and gangrenous. A ligature was carried around the base of the appendix about ¼ inch from cæcum and appendix servered as close to the ligature as possible. On examining the

appendix a cholesterine about the size of a pea was found near the place where the appendix was perforated. In order to cut short the operation the stump was returned without further treatment. The abdominal cavity was thoroughly flushed with steriled hot water, drainage tube inserted and wound closed with great difficulty by interrupted sutures through skin, muscle and peritoneum and dressed with steril dressing. One fourth gr. of morphine was administered and patient had a good night's rest. There being no nausea the following morning the patient was put on a small amount of milk and lime water every two hours. On the afternoon of the same day the temperature reached $99\frac{3}{5}$ ° and, the attending physician being a great advocate of nuclein, one nuclein tablet every two hours was added to the treatment which was continued till patient recovered. The following day, Feb. 16th the temperature was 99°. The 17th the temperature rose to $99\frac{4}{5}$ when the abdominal cavity was washed out with a normal sterilized salt solution, woun ddressed and the temperature again came to normal, pulse being 80, and remained so until the 21st when it ran up to 101, after taking a large dose of salts. After the discharge of a large amount of hard fecal matter, the temperature returned to normal. The wound was also dressed at this time and tube removed.

From this date the patient's recovery was uneventful and complete.

The points of interest in this case are first, etiology; 2nd recovery after perforation and general peritonitis.

THE SPECIFIC ACTION OF QUININE IN MALARIA.

By E. C. Register, M. D., Charlotte, N. C.

THE evident confusion that exists among medical men as to whether malarial fever ever continues after the plasmodium has been removed from the blood, and the tendency to discredit the ability of quinine to destroy this parasite, in all of its forms, is my excuse for presenting a paper on a subject that is, in many respects, already familiar to us.

I am in sympathy with the belief that a malarial fever, without complications, will subside after the plasmodia of malaria disappears from the blood; that we have in quinine the means to completely eradicate malarial poison from the body; that malarial fever occurring in a previously healthy subject, and in the central United States, if at once recognized and properly treated never ends in death; that it is speedily curable, never continues, provided the nature of the disease be recognized and appropriate treatment employed.

When we speak of continued fevers, especially in North Carolina, we mean either typhoid fever, continued malarial fever, or a simple continued fever.

I feel that it is my duty, and it is one of the objects of this paper, to contribute my efforts to influence the disuse, or, as much as possible, toobsolete the "term continued malarial fever." Its prevalence conflicts with established facts in therapeutics; it means that quinine is not a specific in malaria; that the malarial parasite lives and multiplies within the body, regardless of the amount of quinine ingested; that our repeated demonstration of its specific action in malaria has been a dream, and that we erase, from our already small list of specific remedies, the most prominent.

There are no longer differences of opinion as to the causes of these respective fevers, especially of the two former. The physical properties, the prominent characteristics, and the general be-

havior of the typhoid bacillus, are perfectly familiar to the pathologist and bacteriologist. The same can be said of the plasmodium malariæ, and the pigmented bodies described by Laveran. All medical men agree that these pathogenic organisms are responsible for these fevers.

The cause of the third condition of pyrexia is not so clearly understood. Many abnormal conditions of the system, however, may participate in the cause or production of a simple continued fever. A high temperature does not necessarily mean that there are specific germs in the body which are acting upon the thermic nerve center, for it is known that several abnormal conditions of this center produce high temperature when pathogenic germs are absent. So far as I know, the function of every organ in the body depends upon two opposing nerve forces, the accelerator and the inhibitory. Any condition that causes confusion, discord, or a deviation from the normal mechanism of these two forces, is likely to produce a high fever, either by an overproduction of heat, or its imperfect dissipation. In this way it is explained why it is that patients suffering with any febrile condition develop rapidly a very high temperature, when their nervous system is exercised to any great extent, either by fear, joy, anxiety, or responsibility.

This increase of fever is not due to the presence of a microorganism in the body, but either to an overproduction of heat due to an excited thermic center, or an inability on the part of the inhibitory nerves to regulate the dissipation of heat in proportion to its production. While fever can be produced and continued in this way, and its etiology not in any way dependent upon pathogenic germs, yet, by far the most common cause is the action of some form of bacteria upon the thermic center, and the usual birth-place and channel in which these bacteria find their way into the circulation is the digestive tract. Whenever from a mental, physical or diseased cause the normal process of digestion is impaired, we have in the stomach a defective acid secretion, an increased bacterial fermentation and possibly a production of chemical poisons. If absorbed, which is often the case, our patient suffers with chilly sensations, a tired feeling, headache, a feeling of heaviness and fullness of the stomach. A patient in this condition soon develops fever, due to the action

of these poisonous substances on the nervous system, and if he continues to eat, exercise both mentally and physically and does not make an effort to aid nature to eliminate the poison, he is likely to develop a continued fever that resembles typhoid, especially the range of temperature, and I believe that we often call it continued malarial fever that continues after complete cinchonism is produced. Perfect rest, in every sense of the word, and a vigorous eliminative treatment will, in a week's time cure a large majority of this kind of continued fever. It has been suggested, and I believe it is correct, that it is this fever that the Woodbridge treatment so effectually aborts, and not typhoid.

At the last meeting of the Pan-American Medical Congress so many papers were presented touching upon some form of malarial fever; its cause, prevention, duration and treatment, with so many differences of opinion in reference to all its characteristics; so many inconsistent theories regarding the cause of the continued types, that it was evident that we have lost sight or confidence in quinine as an abortive and curative agent in this disease, and that its diagnostic value in continued fevers has not received the attention it deserves. This conclusion is not alone based upon the papers read before that Congress, but from a careful examination of the large amount of literature that has been published during the past several years touching upon this subject. Almost the entire medical profession for a hundred years believed that quinine was a specific in malarial infections. They did not consider its diagnostic value in continued fevers, for they also believed that it would, in a certain per cent of cases, abort typhoid fever. Since we have almost unamimously united in the belief that it does not effect or influence the typhoid bacillus, or any of the pathological processes accompanying the fever for which this germ is responsible, it seems to me that it has a diagnostic value that has not been fully appreciated.

Loomis' and Thompson's new system of medicine, the first volume of which was published a month or so ago, says: "When it is impossible to obtain the aid of the microscope in the diagnosis of malarial fever, it may be definitely made by the therapeutic, test for no malarial fever now known resists good doses of quinine for more than 3 or 4 days. That it is generally safe to

say that if the process be malarial the temperature will be practically normal by the fourth day." Further it says if quinine fails to influence the fever we may rest assured that the process is non-malarial. The therapeutic test here referred to is very important, and should be constantly kept in mind, especially if we do not resort to the aid of the microscope when we are making our diagnosis in continued fevers.

I have advocated the importance of this therapeutic test for ten years, and even now, when the microscope can so easily be resorted to, and our diagnosis made without any question of doubt, still the test is indispensable, for many of us have not the instrument necessary, or have not been specially trained in microscopy to fully realize all of its advantages.

My position, as I have already indicated, is that whenever quinine is properly administered, and a sufficient quantity absorbed, it will destroy the malarial parasite in all its forms and condition.

We have abundant proof to substantiate this statement.

In a private letter, bearing upon this subject, Dr. Robert Bartholow says: I have made numerous experimental investigations of the kind you mention in your letter, and it is clear in my mind that quinine has the power to inhibit or destroy the malarial organism in all of its forms, and as a result of its administration this parasite and its various modifications are acted on in close approximation to the amount of the drug given.

Dr. Tyson, of Philadelphia, says: "In reply to your letter, I am confident that quinine is directly destructive to the organism which is now held responsible for malaria, and that the drug is equally effective in all its manifestations."

Dr. H. C. Wood says: "I would expect malarial parasites to be killed by quinine if the blood contained a sufficient amount of the drug. One to twenty thousand, I believe, is the saturation required."

Dr. DaCosta says: "I know, however, that small doses of quinine may not eradicate the malarial organism, while large doses certainly will."

I could continue to quote, if necessary, as many as thirty more communications that I have received from men eminent in the profession, from all over the English speaking world, who

believe, without a single exception, that there is no condition of the malarial parasite, no stage of its development, or any of its forms, that can resist the action of the cinchona alkaloids.

I have, myself, made a great many microscopical examinations of the blood of malarial subjects, studying especially the behavior of the crescentic, amœboid and ring shaped bodies, which Laveron contends are the forms of the parasite that are responsible for the continued types of malaria, especially our œstivo-autumnal fevers, and I find that they are but slightly influenced by ordinary doses of quinine, if it is given as it usually is, while the patient has a temperature of over 102 degrees. But if we produce distinct, well-marked intermissions of the fever artificially by giving sufficient doses of antipyrin, antifebrin, or phenacetine, the effects of the quinine on the parasite is entirely different; it is acted on and destroyed as quickly as the spherical bodies that are found in an ordinary attack of intermittent fever.

This peculiar action of quinine on the malarial poison has a tendency to confirm a belief that I have for a long time entertained, that the drug is very imperfectly digested and absorbed when administered in any condition when the temperature is over 102 degrees. The belief, to some extent, prevails that any form of the parasite that inhabits the blood cell is not acted on by quinine. There is no doubt in my mind that these conclusions are not erroneous. Besides my own observations I have been able to collect the opinions of thirty-two authors touching upon this point, and twenty-eight out of the thirty-two believe that the endo-globular or intra-corpuscular forms are not, on this account, the cause of an uncontrolable fever, and that its proximity to the blood cell does not, in any way, protect it from the action of quinine.

It is generally admitted that the experiments which have lead to the belief that one grain of quinine will destroy the malarial germs in two and a half pounds of blood which have been taken from a patient suffering with malaria, is correct. Further, it has been demonstrated repeatedly, and it is now considered an established fact, that the parasite under consideration leaves the blood of patients, suffering with malaria, in a close approximation to the amount of quinine given. These experiments, de-

monstrations, and facts, suggest that when our efforts to abort a continued malarial fever are unsuccessful, that we have a complication in our case to deal with, that quinine does not effect, or our patient has failed to assimilate the proper amount of medicine.

I am convinced that the latter is indeed a very common cause of our failures. Whenever we take into consideration the various physical, physiological and pathological conditions that influence every stage of digestion and assimilation, both in health and disease, we can see how little we can depend upon the therapeutics of a drug when administered by the stomach, and its action, in a great measure, influenced by the liver, the organ, the functions of which are conceded to be the first crippled by malarial poison. These facts should impress upon our minds the importance of not relying upon any one method in the administration of quinine. Probably the most unreliable way to administer the drug is by pill form, in the way they are usually made. They have often been prepared for several years, and are as hard and as indigestible as a rock. The drug is nearly always prescribed in capsules. This method is fairly reliable, but if we have any reason to believe that it is imperfectly absorbed, we should administer it in the form of a solution, either the sulphate or bi-sulphate, first by the stomach, then by the rectum, and it is often necessary to inject the bi-sulphate solution hypodermically. Experimental observations show that when it is administered in this way it only requires one-fifth as much as when given by the stomach.

We have an accurate knowledge of how much quinine is necessary, where it is injected directly into the blood, to destroy the plasmodia of malaria, but we have no way to ascertain, in a particular case, when the usual methods of administration have been adopted, when this necessary quantity has been reached except by the results. Therefore it is necessary for this alone to govern us in determining the size of the dose we recommend.

DISCUSSION.

Dr. Sikes.—I do not wish to say anything to refute Dr. Register's idea of quinine on these cases. I have some doubts about

being able to make a diagnosis since malaria has got so common. Up and down the swamps in my country where almost all the people practice medicine upon themselves, I find that an entire reliance upon quinine does not meet the demands of the case. I am glad that Dr. Register is a long way from where I practice, for he would interfere with my business. A great many people treat themselves with quinine, some largely and some not so much. I believe that Dr. Register is correct as to the effect quinine has upon this disease, but there is evidence that if the germ is destroyed, it only takes six or eight days for the trouble to return. I have seen numbers of cases where people treat themselves, and not always themselves but where they have been treated by quinine by those in the profession, that got over the primary attack and were "up and about" as they say, and in from six to ten days, the trouble returns again. I have seen that in localities where you have less malaria it is less easy for it to recur; but I have had some cases under my care that I have kept on quinine all along in combination with other drugs, and still they will recur within thirty days all the whole year through. My notion is, that while quinine may be a potent factor in the treatment of this, unless we use a little arsenic and a little iron to build up the patient, we will have a recurrence of the trouble. That has been my experience.

Dr. Royster.—I may say on the whole that I agree heartily with the ideas expressed in Dr. Register's paper. I believe in quinine as a specific for malaria, I believe in the importance of the examination of the blood in the diagnosis of malaria, I believe in the proper method outlined by Dr. Register for administration. The only point about which I feel disposed to differ, is on the question, whether quinine is a therapeutic test for malaria, and whether we ought to depend wholly upon that as a test. In a paper I read a year ago for the annual discussion before the Society, I expressed the opinion that a great many fevers in which quinine was administered would get well regardless of the administration of that remedy. We all know the influence of quinine in septic fevers. We know that simple continued fevers may get well under quinine, but I take the ground that it is not an absolute therapeutic test for malaria. I want to say that I believe it is unjustifiable and unnecessary

to administer quinine unless we are absolutely certain that it is malaria. I mean quinine in antiperiodic doses. I know that a great many practitioners disagree. For instance, if a physician saw a man for the first time and wasn't sure what kind of fever he had, he would immediately begin giving him quinine; if he gets restless and nervous and does not improve, then it is typhoid fever, if the fever goes down, it is malaria. I take it that this is unscientific and unjustifiable. I am sure I would not care for a doctor to give me quinine if I had typhoid fever. I want to call attention to the fact that the only absolutely certain method of diagnosis in malarial fever is the finding of the plasmodium of malaria in the blood of the patient. I want to reiterate that I believe in the specific action of quinine in malarial fever. I believe it cures it. I don't believe in quinine as a therapeutical clinical test. Before I sit down I want to concur heartily in Dr. Register's remarks on the administration of quinine. I am satisfied that in our State and all over the world quinine has been given recklessly and injudiciously in malarial fever. The custom formerly was when the patient had a chill to begin early in the morning and give ten grains of quinine every two hours up to the time of the chill, thinking by that means to "break it up," as it is called. I think this treatment is not only worthless, but absolutely to be condemned. I may be wrong, and some of the older heads may prove that I am. The quinine has not dissolved in the stomach and has not entered the blood in such a short space of time. I do not believe in the method of trying to get a certain amount of quinine into a patient before the time of the chill. The method which I have followed, which is not original with me at all, is one which is coming generally into vogue, and is being used in the Johns Hopkins Hospital altogether. It is to administer to every adult from three to five grains of quinine in solution or in capsules every four hours, regardless of the time of the chill, height of the fever, or anything else, giving acids if necessary to promote the absorption of the quinine. Give to a child from one to three grains with the same interval between the doses.

Dr. Crowell.—I remember Dr. Royster's paper a year ago. I have done no special work on that line since that time, but I am of the opinion that there is no continued fever, unless it is

for a day or two, other than typhoid or malarial. If you fail to find the plasmodium of malaria in the blood, and if you will try the serum test for typhoid fever, you will find that there is typhoid fever. I think beyond a doubt that quinine will destroy the plasmodium of malaria. I do not believe there is a continued fever other than typhoid or malarial.

Dr. O'Hagan.—At the risk of making myself troublesome I would like to say a few words in reply to my young friend over there. Before I do so, I wish to say, that I perfectly endorse the views Dr. Register has taken in his paper. I have been dealing with malarial fever for half a century, and being a liberal-minded man, I sometimes use pretty liberal doses, but at no time in my life have I ever attacked my unfortunate patients with ten grains of quinine every two hours. I can generally bring about cinchonism without knocking them senseless every day in the week, as I certainly would do with ten grains of quinine every two hours. I do not know what kind of nerves the people of Wake county have, but I think if they were subjected to that treatment you would have a good many visitors up in your establishment from that county, Dr. Murphy. There is a right way and a wrong way of giving quinine. If you give it right you will get therapeutic results, and you will get better results from it in solution with some acid, generally dilute sulphuric acid. You can make it partially palatable, but where I can have control of my patients, I generally give it just so, at the decline of the fever, fifteen grains. It seems to have a better effect on the plasmodium in small doses, especially in the dry form. It is much more readily absorbed in the stomach when desolved in acid, and consequently requires smaller doses.

I will not enter into a discussion as to the number of fevers which prevail here in this State. I only know that where we live we always have malaria and always will, winter and summer, and we have typhoid fever too. I am not scientific enough to use these instruments, and as to the microscope I am in a state of childish ignorance. I know one when I see it, but as to the use of it I know nothing at all, neither do I understand anything of bacteriology, I am sorry to say. I learn from the younger members because in my day these things were not known. I have stood by bed-sides, and have picked up a little

clinical experience, and I still hold that although I would not begin to swear by my diagnosis in malarial or typhoid fever, I arrive at very satisfactory results. I find that quinine properly given will destroy the plasmodium, and when it does not do it, I expect it is typhoid. However, I cannot allow my old friend quinine to be abused in my presence without defending it. There is a right way and a wrong way to give quinine, and if not properly presented to the body, stomach, bowels and liver you will not get good results. I say there is no greater blessing to the people in the world than quinine properly given. I think Dr. Register's paper was a very timely one.

Dr. Duffy.—In this connection perhaps it would be well to refer to the preparation of quinine, which so far as I have seen is only put up by Sharp & Dohme, bimuriate of quinine and urea. I refer to it on account of its remarkable solubility for hypodermic use. That has sometimes served me when nothing else would. I have been called to patients who were comatose and having convulsions from malarial disease, so that I could not administer anything at all by the stomach. Six grains of that—it is put up in three grain tablets—may be dissolved in twenty minims of water. I have used it hypodermically without any abscess. I had the misfortune to get one last year, the first I ever got. Before that I thought it was well nigh proof. It seems to me rather optimistic to expect the eradication of malarial germs by a few doses of quinine. I think this year I had at least three cases of malarial neuralgia with pain over one brow coming on at a certain hour of the day, the most violent neuralgic pain, which I could attribute to nothing but malaria. The periodicity would seem to indicate it, and in these cases I have given quinine regularly, and the pain would come on regularly, no fever, but periodical neuralgia. I have known Warburg's tincture to stop it after quinine had failed to serve me.

Question asked. "Have you ever given soda"?

Not in neuralgic cases that I remember. In a case where the pain came on periodically at a certain hour, in a place where malaria is common and where malarial fevers are, it is very suggestive of that, especially where Warburg's tincture cured it.

Dr. Royster.—I want to insist that Dr. Duffy has no absolute assurance that that was malaria, as there are many drugs in Warburg's tincture and among them arsenic. Any body could take exception and say that it was not. I want to ask Dr. O'Hagan the right and wrong way of giving quinine. I would like to know the method of administering it.

Dr. O'Hagan.—I do not profess to say that mine is by far the best and correct way of giving quinine, but it simply suits me. I want to say something about periodic neuralgia. All periodic diseases have a certain cycle to run and are controllable to a greater or less degree by quinine. I have known them time and time again to be modified when the paroxysm comes on, by a dose of quinine, 20 grains. Periodic neuralgia, or sun pain, as it is called, because it usually begins with the rise of the sun, is helped that way, and in periodic neuralgia you will get good results from the use of quinine. Now, Dr. Roysrer, I cannot confine myself to any one method of giving quinine. If I had a good substantial stomach to deal with, I would give it to him in solution. Sulphuric acid might add something, and would make it less bitter. If it was a baby, I would put the quinine in some kind of syrup, for with children you have to make the dose as palatable as possible, and it is a hard thing to make palatable. It is almost impossible to administer it hypodermically to children and infants. Even a puncture of the needle, unless it is very aseptic, may cause inflammation but it can be given epidermically. Take the epidermis off by a blister and put the quinine there and it will be absorbed readily. I have no confidence in the administration by inunction. I have no fixed method of giving quinine; I give it according to the case. Some stomachs are exceedingly sensitive, and others take it readily.

Dr. Burroughs.—I would like to say something about Dr. Duffy's idea in regard to periodical pains, speaking of it as accompanying malaria. I came from a section of the country where we do not have malarial fever. I have never seen a case of it in the mountains. We have had some cases coming up from South Carolina and from the eastern part of this State, yet among the mountains I have seen this supra orbital pain that he speaks of. It comes on at a certain time each day, and in regard to the treatment, I will say that quinine has no influence

on it. A small dose of morphine given hypodermically will relieve it, but it will come back again after a time. I find nothing to serve me so well as a hypodermic injection of nitrate of strychnine. You may rely on it as almost specific in cases of this kind. Nitrate of strychnine given twice a day in doses of $\frac{1}{16}$ of a grain hypodermically and increased gradually to twice that much, will gradually ease the pain and it will disappear in a little while. Keep up the treatment for a week or ten days after, and you will have it no more.

Dr. Flippin.—In connection with the supra orbital pains, I will say that I was raised in a section of country where we do not have any malaria, and I never saw a case except in the eastern part of the state. I have gotten a good deal of good results from the use of salicylate of soda in this periodical supra orbital pain. I give big doses of it, from 20 to 30 grains, and it has always broken it up for me. I have never gotten much results from the use of quinine.

Dr. Robinson.—I did not have the pleasure of hearing the paper, as I came in late. It seems to me that the ground has been pretty well covered, and certainly we have a variety of remedies sufficient to cure almost any disease of supra orbital neuralgia. I hardly know how to discuss the paper, as I didn't hear it. It impresses me both theoretically and practically that quinine ought to break up these fevers, and as Dr. O'Hagan says, properly administered, it does. I think we very often overlook the fact that we have other factors at play which interfere with the proper administration of and so with the effects of the quinine. Often we have a condition of the alimentary canal which materially interfers with the effects.

LAW VS JUSTICE.

By G. T. Sikes, M. D., Grissom, N. C.

FROM a scientific standpoint Law is reckoned as a subjective branch of science, while medicine is an objective branch. But when the two combine the objective is consumed by the more potent factor and all then must be so fabricated as to stand a logical analysis; the offspring must be equal to the standard of the best parent. Law in a broad sense, which cannot be discussed here, only in definition, is a rule of action, laid down or prescribed by a superior power for the protection of the good and the restraint of the bad: with one eye gazing on justice and the other on the road that would lead hither but does not. Law is divided, and subdivided until after the Divine Law, which itself is known by various names and divisions, and the laws of nature that enter into and control everything in creation, from the heavenly bodies about their sister planets to the tiniest seed and plant; then another step we reach the laws of society out of which grow the various divisions of civil law known separately as declaratory, remedial, penal, repeating, etc., the subject or science of which taken collectively makes jurisprudence, and this jurisprudence complete with the practice of medicine makes the medical jurisprudence which we are here to consider. This branch of medicine has more formidable phases to the young than any other, because the medical profession is a brotherhood full of ethics and kind feelings and not accustomed to that pertinent interrogatory and criticism that is so often tendered in irony and sarcasm from the learned bar.

Medical jurisprudence would naturally suggest its consideration under two great heads viz: The laws now existing with their various deformities and the amendments required to entitle them to an equitable construction. Whatever may be the defects in the existing laws there is doubtless greater trouble arising from a want of a strict conformity to the demands of the same

than from any defect in the language of the statutes themselves. Our statutes relating to the medical profession as a whole are possibly as good as could be expected, especially when we consider the short period that has elapsed since it was first suggested to the minds of the people at large that doctors needed no law whatever, except what came indirectly through the various channels that effected mankind at large. Our state board of health which should be the pride of our people, is doing a great work by the aid of its various auxiliaries. Also good marine and inland sanitary regulations, with a law regulating the practice of medicine, which if properly and rigidly enforced is possibly second to none; and much has been done by the way of legislation to prevent the spread of epidemics; in fact it may be we have had a plenty if not too much legislation; it is not an unintelligible mass of class legislation and still-born laws that we need but a few plain simple enactments that will bespeak the mental caliber of the age and people to the historian yet unborn. In the infancy of progressive civilization rules were laid down for the control of every petty detail, but as science advanced it brought with it a gradual emancipation of such flimsy, awkward customs and gave birth to two factions, which were known as strict constructionists and liberal constructionists, the one holding rigidly to the words, the other to the meaning. But the days of construction have now passed, so far as we are concerned, and our statute books groan and sigh over offspring that give notoriety to the grief stricken by an annual visit of the sheriff, who demands with the high hammer of the law another ten dollars from high, low, rich and poor; a legislative enactment as thoroughly destitute of prudence and charity in the true sense as can possibly be conceived. The medical profession of North Carolina does not pose as an organization pleading for charity, for it is the parent of a charity which has been defined as an unjust tax levied upon ability, energy and thrift by incompetence, indolence and shiftlessness; but this leech has come from a custom, and grown into an unwritten or common law from its birth being so remote that the memory of man runneth not to the contrary, but she simply asks that she may be left upon an equal footing with the various other arduous undertakings of life. The farmer has no special to pay, the teacher has no extras

to fork over, the mechanic has no encumbrance, the nostrum vender no restrictions laid around him nor even the dude nor tramp are asked to apply the shoulder to the wheels of honest government and give a healthy momentum, still they have the full protection guaranteed by the constitution to every man, of life, liberty, property and to worship God according to the dictates of conscience; but the every day heroes of the world who have once paid for the privilege by satisfactory evidence to the law of a competency and who sacrifice time, means and even life for suffering humanity, must build colleges and support institutions, erect monuments and themselves go down unhonored beneath a burden of taxation.

As for the laws that demand correction, the unjust special tax on professional men should certainly be repealed. The State Treasurer's report shows for the year 1896 there was collected from the lawyers, doctors und dentists of N. C. $18,790, which amount, allowing seventy five cents on a hundred dollars worth of property, would be equal to the tax on $2,684,285, making an unjust burden upon the class of men who do more for the cause of humanity in proportion to their ability than any others. Roughly estimated there is about 1500 licensed physicians in North Carolina who probably paid their special tax amounting to $15,000; now supposing that this number of physicians do an amount of work that will make an average of $2,000 per capita it would make a grand total of $3,000,000 a year; of this allowing fifty per cent for loss and charity practice, (which is doubtless too large for our city brethren) it with the license tax still leaves $1,515,000 that the medical profession of North Carolina bears in excess of an honest advalorum. But possibly the gravest defect in the laws bearing on medical justice is a want of a statue stating or implying that in scientific investigations none except men com- mensurate with the depth of the investigation shall be allowed to sit in judgement on the case. This could not possibly be construed as an injustice to our neighbors and friends who other- wise would constitute the jury; in the first place the untutored mind cannot see as deep into a solid body as the educathe waters ted, and in the second place the opinions that float on the face of are much more subject to be ensnared in the net of the wily pro- fessional than those of sufficient weight to root themselves inthe stable foundations.

I am not forgetful that any man on trial for a capital offense has a right to challenge a certain number of his countrymen who may be offered as jurors in the case pending, but yet this does not at all assure him that his destiny may not yet be entrusted to twelve men who can neither read nor write, and there are many men of this class who are much better judges of deep questions than some so called scholars; yet we believe that there are cases in which nothing but scientific talent should be considered as competent jurors in the case. Take if you please the noted Maybrick case of Liverpool which was detailed in the NORTH CAROLINA MEDICAL JOURNAL, of February 5th, 1897, and consider the evidence in the case in question; first take a man of dissipated habits, in poor health addicted, to the use of arsenic and strychnia and other tonics, put him on horseback in a drenching rain and leave the April breezes to fan the saturated clothing dry, and what would you expect less than a chill on the day following? That called a physician and later the second physisian, who enumerated among his symptoms vomiting, pain and burning in the stomach and bowels, thirst and great prostration; and was medicated by his anxious advisers with the following drugs as medicines, viz: sulphonal, cocaine, bismuth (double doses) nitro glycerine, phosphoric acid, cascara, Plumber's pills (containing antimony and calomel) prussic acid, antipyrine, jaborandi, chlorine, morphine, Fowler's Solution of Arsenic, bismuth and opium supposatories; the combined ingenuity and skill of several physicians, and to the surprise of those present who are unacquainted with the case this man died the fifteenth day of his illness; and immediately after his death two brothers brought the charge of murder against his wife, claiming that death was caused by arsenic administered by her, which claim they failed to substantiate, but by chemical analysis Mr. Davis reported one fiftieth of a grain of arsenic found in the liver, nothing in the stomach or its contents and traces not weighable in the intestines. Upon this threadbare, flimsy tissue, braced by two brothers, bitter enemies, this poor woman was brought into open court, tried and convicted of the murder of her husband, who had himself ascribed the beginning of his illnsss to an over dose of strychnine which he had taken fifteen days previous to his death. Now had the jury in question been composed of the witnesses themselves instead of bakers, plumbers and laborers to

whom the evidence was a mass of mystery and contradiction, the verdict would have been quite different.

Another much needed law is a statute regulating the manufacture and sale of nostrums. As it now stands, so far as I am aware, there is no tax on the thousand and one king cure alls sold at random and recommended with impunity all over our state, and indeed does this nostrum business afford such allurements that moonshiners have taken advantage of the opportunity and bottle their plutonian fire schorched nepenthe and label it in attractive type "Ginger Tonic" etc., a fraud upon the goverment and a slander upon the medical profession. Our legislature, in years past, thought it wise to enact a statue for the protection of agriculturists who might buy fertilizer for their cotton or tobacco and in keeping with said law require each brand of commercial guano to be analyzed and the formula published for the protection of the people against fraud. And not only this but our law requires the farmer shall be acquainted with the age of the seed that are offered to plant his farm or garden and as such require that the package shall bear the date of the growth of such seed. These are wise and commendable laws, but how careful are men sometimes to scrutinize about minor things and overlook major matters. What legislature has passed a law demanding that the thousand and one patent nostrums and proprietary humbugs shall have their formula printed and attached to the wrapper or box, or who has thought it wise and just while he is building his reputation as a lawmaker to suggest that the depraved minds and appetites and stomach be protected against the cunning of money sharks and thieves who, vampire like, live at the cost of the lives of their fellowmen.

It is a fact that men who never saw within the walls of a medical college, nor read the preface to a materia medica have put up teas and sold them under a guarantee: "No cure no pay." And our friends the druggists linger long, and tardily learn that they are not licened to practice medicine, but to compound the same; and not only druggists, but every cross-roads merchant has a fantastic array of blended colors showing that he too is an auxiliary to the quack, who gives him fifty per cent of all he can extort from the ignorance of his patronage, and recommneds his medicines as superior to the skill of the licensed physician in the community; also long as he correctly labels his articles and

no one is sacrificed by his blunders he goes on unmolested.

There are several other subjects that should engage the attention of the law making powers, such as an institution for the care of the idiotic so as to control them and have them taught to work, so that they may not be a burden to the state, and cared for in a state of of celibacy, lest they transmit a like trouble and kindred afflictions to posterity; and this would doubtless save untold misery and affliction could a like application be made to that unfortunate class whose glands have been inoculated by the king of germs (syphilis). It is a subject of great importance that there should be a standard of qualification for the midwives that go to and fro all over the country, oftentimes not only practicing their art but passing as experimental practitioners and surgeons. In conclusion which the time now suggests proper, there is one point that surely should engage the mind of every medical man and that is forensic medicine proper. This is the crucial test by which a man is often measured, yet is not always an impartial judge; but the first thing in every case is to thoroughly acquaint one's self with the subject under consideration, and second is to tell what you know to be true and enough to satisfy the demand and no more. With these credentials no man need shudder because he is made an object of conspicuity, nor need he fear to meet the cross examination that so often contradicts the witness and completely riddles his entire testimony. But David Crocket's maxim: "Know you are right and go ahead" will anchor any young man safe in the harbor of success. It was the boast of Augustus that he found Rome of brick and left it of marble. But how much nobler will be the sovereign's boast, when he shall have it to say: That he found forensic medicine dear and left it cheap, found it a sealed book, left it a living letter; found it the patrimony of the rich, left it the inheritance of the poor; found it the two edged sword of craft and oppression, left it the staff of honesty and the shield of innocence.

DIPHTHERIA ANTITOXIN.

By J. Meigs Flippin, M.D., Salisbury, N. C.

IN bringing this subject before the Society, it is not what I may have to say, that will be a source of enlightenment to our members, but the general discussion which I hope to inaugurate by my remarks, that will be of benefit to us.

How shall we treat diphtheria? This seems to be the subject above all others, which, to-day is interesting the attention of our profession. Shall we treat diphtheria medicinally, with a high rate of mortality, this plan of treatment gives; or shall we pin our faith and entrust the lives of our patients to the newly risen star of hope, antitoxin? Before we accept or reject this highly scientific product of the culture tube and the guinea pig let us study the source and action of antitoxin before prescribing it.

The acceptance of statements and rumors as facts upon insufficient evidence and want of positive proof has flourished as the offspring of ignorance in all ages. It has furnished, and undoubtedly will continue to do so, material for many chapters in the history of medicine. It inspired the senseless and almost incomprehensible belief in witchcraft and demon possessed human beings, and prompted the oft repeated and always unsuccessful search for the philosophers stone and the *elixir vitae.* This tendency to belief in unauthenticated rumors and upon facts probably exists to-day in as marked a degree, as far as some things are concerned, as they did in the age we look upon as that of the grossest ignorance and superstition, although the absurdity of it is not as potent to us as it will be in ages hence, when perhaps many of the hobbies of our profession and most generally accepted theories are proven absurd and false. As a proof that our profession is not above these absurdities, and that very many theories and remedies, which for awhile are considered as true and infallible are mere fiascos, based upon

this tendency to accept things and facts unproven, as proved, it is but necessary to call our attention to Brown-Sequard's Elixir of Life, Hammond's Cerebrine and Koch's Tuberculine, which upon the inspiration of the moment were considered as remedies, yet, what respecting member of our profession would to-day prescribe these nostrums as remedies, sure and specific? It cannot be denied, however, that it is largely owing to these men, that medicine occupies the high standing in the scientific world that it does to-day, more especially to the scientific researches of Koch. Thus, when we view the shattered idols of these profound scholars and scientists, by the pale cast of thought, it behooves us, the vast army, to accept their statements with cool circumspection. Now, in order to do so relative to antitoxin, let us see. What is antitoxin? It is a serum that was first discovered by Behring and Kitasato while trying to perfect the tetanus antitoxin. Any animal may be used for the development of this serum.

The horse has finally been selected as the more suitable, as he is more uniformly healthy, of quiet disposition, more easily operated upon and furnishes a larger proportion of serum.

As to its development and culture, especially where as virulent a culture of the diphtheria bacilli as is possible is desired, the bacilli is grown upon Loeffler's solidified blood serum and one part of a 1 per cent. glucose boullion, this is then placed in a temperature of about 112 F. for 24 hours, after which, the bacilli are found to be well developed, then single colonies of these bacilli are transferred to flasks containing a 2 per cent. alkaline peptone boullion, then placed for 48 hours in an incubator at a temperature of 100 F. The contents of the flask are next transferred by pipetts to larger flasks and placed in an incubator at the same temperature and kept there until the bacilli have become very numerous and produced in the boullion their characteristic toxin. The microscope is next used in order to determine that no other bacilli than the diphtheria are present, an antiseptic is next used to kill the diphtheria bacilli and preserve the culture from decomposition; in other words to prevent its contamination by other micro-organism. The usual antiseptic is trikresol, as it is comparatively harmless to animals, and does not by its odor prevent the detection of decomposi-

tion, should it occur. The boullion is now filtered through a modified chamberlin filter to remove the dead bacilli. The resulting product freed from the bacilli is simply a solution of the toxin secreted by the bacilli; it is an intense alkaoloidal poison, the same that poisons the diptheria patient if they do not overcome it or die in the meantime from suffocation by obstruction of the air passages by the pseudo membrane.

The exact toxicity is determined by its action upon small animals preferably the guinea pig. The horse having been tested for glanders and tuberculosis and found to be healthy, is given a minute injection of this toxin. This does not produce diptheria in a horse, but causes a slight oedema at the point of injection with some febrile manifestations. This indicates natures manifestation against this toxin, her formation in the blood of an anti-toxin, just the process that occurs in the patient with diphtheria, or as to that matter with pneumonia, and when a sufficient amount of the antitoxin is formed in the blood of the patient to neutralize the toxin, resolution sets in and the patient recovers. These injections are repeated upon the horse every six days for about three months, increasing the amount of toxin at each injection, until at the end of three months there is no reaction from the most virulent toxin that can be produced. This is an indication that he is immunized against diphtheria and its toxin or poison, that is, that his blood is as full of antitoxin as it can become. Next, a trial supply is drawn from the jugular vein, then the serum is separated from it and its antitoxic power tested by employing it upon guinea pigs poisoned with the toxin. If the antitoxin is found to be of suitable strength, the horse is bled freely, the serum, or antitoxin collected, sterilized and sealed in suitable bottles and is then ready for use. Such is what I understand to be antitoxin.

Before proceeding with this subject further, it might be well enough to study the disease for which we propose a remedy. In this way, we may arrive at some definite conclusion as to the merits or demerits of the remedy now under consideration. What is diptheria? There are two definitions, the latter of which, I think the correct one. First, it is a systemic disease with both general and local manifestations. The local manifestation being secondary and caused by the systemic poisoning

and not the cause of the systemic disturbance. That the diagnosis rests upon the systemic and local manifestations. Second, diptheria is a local specific disease, due to the presence and action of bacilli, characterized by a deposit of pseudo-membrane at the sight of infection, accompanied by constitutional disturbances and followed by nervous symptoms, due to the absorption in the circulation of a virulent chemical agent-toxalbumen, which is produced by the local development of the Klebs-Loeffler bacilli. As to diagnosis, the only pathognomonic feature of diptheria invariably present is the specific micro-organism' known as the Klebs-Loeffler bacillus and that it produces at the point of infection a chemical poison—toxine—which, being absorbed into the circulation, gives rise to the peculiar nervous symptoms. This is the cause of the constitutional disturbance of diphtheria. The Klebs-Loeffler bacillus are found only at the points of infection, not even dipping down into the deeper tissues beneath the membrane. They do not invade the circulation, but the toxines produced by these bacilli are taken up by the circulation and by their virulent action upon the system may produce death in a few hours. If this be true that diptheria is a local disease caused by the Klebs-Loeffler bacilli and they are situated locally and do not penetrate the tissues and are not taken up by the circulation, then it might be asked, why not treat the disease by local antiseptics, destroy the bacilli and prevent the absorption in-to the tissues, which is the cause of the constitutional disturbance? Is ditpheria a local or constitutional disease?

If local, when should we cease local treatment? When commence constitutional (if constitutional), and why ever use local treatment at all? From my personal experience, local treatment is indicated in the earlier stages, and best discontinued in the later, provided it be a severe attack, when constitutional measures should be instituted and pushed with vigor, especially stimulants. But now that we have antitoxin, if it proves a better plan of treatment, I think it the duty of every physician to employ it in preference to all other plans of treatment, if it is true that it lessens mortality and that it is a better remedy than all others—then if we fail to use it, we are no longer worthy to be classed as intelligent physicians. If we do use it, it does not follow that we must discontinue all other

treatment, but we are to continue our other treatment just as if antitoxin were not used. In this way we are likely to obtain the best results.

The theories of Metschnikoff's phagocytosis and Buckner's alexcenis both point towards the antitoxin theory.

The phagocytic theory supposes that immunity depends upon the seizure of invading micro-organisms by amoeboid cells, chiefly leucocytes and other mesodermic cells, and the subsequent destruction of these organisms in the interior of the cells. That the leucocytes are charged with the defense of the body and engaged in a war of extermination with any parasite which may be introduced within our ecenomy. That the phagocytes eat up, digest and annihilate the most virulent bacteria; and when the phagocyte's have gained supremacy over the micro-organisms, then immunity is acquired.

Now, in connection with this process of the leucocyes, is that of the glands, or rather cells, that by which they form a bactericidal agent, which may be called nuclein. That, from introduction from without of certain micro-organisms, the body fluids may acquire bactericidal properties as regards the special micro-organisms introduced. This might be termed natural immunity. Such, for instance, as a patient suffering from acute pneumonia, for several days with high temperature, when suddenly the fever drops to normal and the case ends by crisis, or self immunity, say by phagocytosis. If this be not the case, we know there must be a cause. Why this sudden abatement of all the alarming symptoms? Is it not reasonable to suppose that the toxins which were producing the high fever and general disturbance of the system, have formed in the blood an antitoxin which has neutralized the poisons and thus resolu tion sets in?

Now, to go from a natural immunity to an acquired immunity, seems to be but a short step. To take the toxins of a special disease, say diphtheria, and by injection into some animal keeping on the injection for a long period, or until no reaction takes place from the toxin, then will not the blood of that animal contain a large amount of antitoxin? Now if this antitoxin rendered inert the toxin in the animal, why will it not to a certain extent have the same action upon any other animal suffering from the disease produced by the special toxin? This is

just what diphtheritic antitoxin does. Now as to the proof that it does this. Take two guinea pigs of equal weight, inject each with a fatal dose of the toxines of diptheria, (or Klebs-Loeffler bacilli) then inject one with the antidote for this poison; that is antitoxin; and do nothing for the other pig. The one that receives the injection of the antitoxin gets well, the other dies. Does this prove anything? I think so far as it goes, it proves that antitoxin is as much an antidote for the poison of the toxines of diptheria, as ammonia is an antidote for the poisoning of hydrocyanic acid, or in fact any other poison and its antidote.

Now the advocates of antitoxin claim that to be effective, the remedy must be used in the earliest stage of the disease; that, if used in the last stage of the disease it will be followed by little, or no beneficial results.

I believe no one would claim any, or little, benefit from an antidote to arsenical poisoning after structural changes had taken place, still, it does not follow, that the antidote if administered immediately after the poisoning, would not have prevented the structural changes, with ultimate death.

The consensus of opinion of the medical world as to the use of antitoxin seems to be largely in its favor, as a therapeutical remedy in diphtheria.

I find upon careful investigation that individual statistics as to the utility of a remedy, are comparatively worthless, and are not to be relied upon; that by individual statistics you can prove the mortality of diphtheria treated by antitoxin, to be 5 per cent., while by the opponents, you can get clear and seemingly conclusive proof that the mortality is largely increased by the use of antitoxin. Therefore, the only way to arrive at an unbiased opinion, is by taking a large number of private physicians residing in different localities, and comparing their results with the remedy, and their opinion as to its efficacy. This the American Pediatric Society have attempted to do in an impartial manner. Now statistics to be of any real value, depend upon four factors. First, the number of cases; second, the conditions under which they have been observed; third, the accuracy with which they have been reported; fourth, the care and honesty, with which they have been analysed. With these considerations in view, I will give the Societies report, in part.

The circular letter asked for information upon the following points: Age, previous condition, duration of disease, when first injection was made, number of injections, extent of the membrane, tonsils, nose, pharynx and larynx; whether the diagnosis was confirmed by culture; complications, thus, viz: pneumonia, nephritis, sepsis, paralysis; the results, other treatment used, and general impression drawn from the case. Reports were received from 615 different physicians; with 3,628 cases. Of these 244 were excluded on account of doubt in diagnosis, no culture having been made. This leaves 3,384 cases for analysis. Taken from 615 different physicians residing over 15 States; in 593 cases the tonsil alone were invovled; 1,397 cases, the tonsils and pharinx, tonsils and nose, and all three involved; in 1,256 cases, the larynx was affected, either alone, or with the tonsils. Now adding the above cases, to those of the New York Health Board and Chicago Health Board, we have a total of 5,794 cases; of this number, the committee finds 4,837 cases verified by a bacteriological examination, with 556 deaths, giving a mortality of 11 4-10 per cent. This excludes those cases which were moribund upon first injection; including the moribund cases, we have a mortality of 18 per cent. This, in brief, I find to be the gist of the report.

I have examined a large number of reports from individuals, who wish either to prove that antitoxin is the remedy par excellence, or that it is detrimental to human life. I find that neither can be relied upon and that such reports do the remedy more harm than good, and prove absolutely nothing. As we all know, figures may be twisted to prove propositions which are diametrically opposed to each other. But I find this committee's report is perfectly fair in every detail, and carries a preponderance of evidence in favor of antitoxin as a therapeutical remedy in the treatment of diphtheria. One other fact in this report deserves special attention, and that is, that 553 cases were laryngeal and required intubation, that in these there was a mortality of only 25 9-10 per cent. Now if diphtheria antitoxin is worthless in all other cases and can give us such low mortality in these cases, it deserves to be classed as the greatest medical discovery of the age.

Diphtheria of the conjunctiva is of relatively rare occurrence

in the United States; however, it does occur and is so rapidly destructive to vision that it is important to know that we have a remedy in antitoxin, which will arrest its ravages and prevent blindness, the membrane disappearing in from 24 to 48 hours after an injection of 10 c.c., of 1600 units of antitoxin is administered.

Let us study for a few moments the argument against antitoxin.

That no one has ever seen the antitoxic properties of the remedy that you are injecting into the system, a ferment which may kill by paralysing the heart, that it sometimes produces fatal convulsions, that it produces acute nephritis, that it fails to shorten the attack of diphtheria, that it fails to prevent paralysis, but on the contrary often produces it; that it produces an erythemetus eruption; that its dose is uncertain, that it is contra indicated where there are mixed cultures of streptococcous or staphylococcus, or where complicated with scarlet fever, or measles; that you should inject a case before you make your diagnosis; that Behring gave antitoxin to the world as a specific against the toxins of the diptheria bacillus. That it has no action on the bacillus, they are not destroyed by the antitoxin, it is not rendered less virulent, it is in no way influenced by the treatment.

That diptheria in man is rarely, if ever, produced by the Loeffler bacillus, that the bacilli are found in the mouth and throat of perfectly healthy people, who have no other symptoms of diphtheria, and who remain free from any attack of the disease. In this way the opponents of antitoxin claim that the advocates of antitoxin get their low mortality by taking the evidence of the microscope in lieu of clinical evidence.

If antitoxin is an antidote to the toxin of the Loeffler microbe, cardiac depression, death from cardiac paralysis, albuminuria and post-diphtheritic paralysis should all be prevented by the action of this agent.

That it has utterly failed to accomplish any of the results for which it was claimed and intended. As a proof that antitoxin is a dangerous remedy instead of a desideratum Dr. Winters cites 25 or 30 cases of favorable prognosis which had been injected on the 1st, 2nd and 3rd day, and still died, and seem-

ingly, from Dr. Winters' standpoint, were killed by the remedy.

Then Dr. Winters gives statistics gathered at home and abroad, proving that the mortality of diphtheria is higher under the antitoxic treatment than without it.

Now all the advocates of antitoxin claim, that to be effective it must be used in the early stage of the disease; now bearing this in mind, I wish to give one of Dr. Winters' own tables of statistics, which I think, is in favor of antitoxin.

1st day	108 cases,	mortality	10 9-100.
2nd day	130 "	"	25 19-100.
3rd day	116 "	"	34 18-100.

This, according to Dr. Winters' own statistics, shows that if antitoxin is used in the very first stage of the disease, the mortality is very low; but, if used later on in the disease, it is not so effective. This, I think, is all the advocates of antitoxin claim.

During the past year, the death rate from diphtheria, at the Municipal Hospital (Philadelphia) was 22 2-10 per cent. of the 869 cases of diphtheria admitted to the hospital during 1896; 533 cases received the antitoxin treatment, in addition to other approved treatment, and of this number 142 died—a mortality of 25 67-100 per cent.; 316 cases were treated by remedies other than antitoxin, and of these 51 died, a mortality of 13 29 100 per cent. At first glance, we see a difference in the mortality of 12 38-100 per cent. in favor of other treatment than antitoxin. But if we notice the statements of Dr. Wm. M. Welch, the physician in charge, that no scientific test of antitoxin was attempted, it may readily be inferred that the cases not receiving antitoxin were so mild that it was not considered necessary to give antitoxin; that they ought to recover on any treatment. On the other hand, those cases receiving antitoxin treatment were considered too dangerous to be trusted to medicinal treatment alone, but also received the antitoxin.

This is another case where figures without lying can be made to misrepresent facts.

Had medicinal treatment been followed in all the cases the probability is that the mortality would have been much higher than it was; and had the mild cases received the antitoxin, the

probabilities are very strong that the mortality would have been much lower than 12 38-100 per cent.

Those opposed to the use of antitoxin in diphtheria were fond of pointing out Dr. Virchow as being against the use of antitoxin, and since he has become an advocate of its use, you never hear him quoted any more.

Now in conclusion let me say, if there is any one thing in the medical world more than another which will mark the beginning of the 20th century, it is the lessening of therapeutic agents by physiological methods of theraphy, which have been shown to possess the power of antagonising specific pathogenic germs; by distributing to their ultimate destination nutritive material, and stimulating the physiological functions by normal physiological influence.

We do not claim to have discovered the Fountain of Youth, but that we are living *very* near the age when the medical world may hope to discover that man carries within his own economy an antidote to all contagious and infectious diseases which have cut short man's alloted time—that from the present outlook of the scientific medical world, future generations may hope to die a physiological death.

DISCUSSION.

Dr. Robinson.—Mr. President, I would like to make a statement. During an epidemic which prevailed last winter in our town, some four hundred cases or more were treated by antitoxin. A good many laryngeal, and some I know were comatose. I know of but one death which occurred in all these cases, and that was in a child of eight months when it was applied very late, and even the throat and nose cleared entirely even then. I consider death in this case as due to septicœmia and not to the diphtheria. I think if we treated by antitoxin, we would save a great many we now lose. I only make the statement, sir, to substantiate the grounds already gone over.

Dr. Lewis.—Dr. Kinyoun has collected statistics of 10,000 cases. Of 7,000 which were treated with antitoxin, the death rate was 8 per cent. Three thousand cases collected from the same epidemic and not treated by antitoxin, the death rate was 45 per cent. It seems to me that if there is no question about the accuracy of the figures that that statement is conclusive.

A NEW TREATMENT OF HYDROPHBIA—REPORT OF A CASE—RECOVERY.

By J. B. H. Knight, M. D., Williamston, N. C.

FOR some time, or since the discovery of permanganate of potassium as an antidote for morphine, I have been thinking over the extension of the use of this drug and reasoning to myself thus: If permanganate of potassium has the power through its powerful affinity for oxygen, to tear to pieces morphine, a vegetable poison, composed of carbon, hydrogen, oxygen etc., rendering it inert, why should it not exert the same influence over all poisons of a like nature, composed of the same elements—carbon, hydrogen, oxygen, etc?

I had so much faith in this remedy, pinning my faith to its powerful affinity for oxygen, that I determined to try it on the cases of this class as they presented themselves. I include in this class of cases all those arising from either animal or vegetable poisons, such as hydrophobia, tetanus, stings of insects, snake bites, morphine, atropine, etc.,

My first experiment was some two years ago in the case of a spider bite. The case was that of a woman 40 years of age, who had been bitten by a spider several hours before I was called. Found her in intense pain and on the verge of convulsions. Her arm very much swollen and quite red. I at once gave her about 3 grs. of permanganate of potassium hyperdermically, and left her a solution of the drug to take per orem every two hours in the same dose. The arm gave considerable pain for two or three days, and had to have an occasional poultice, but she came around all right in a short while, and no other drug was used. This gave encouragement to my theory.

On the night before I was called to the case I am about to relate, which was in the early part of the month of Feburary '97,

I was in conference with Dr. Harrell of this place, and Dr. Baker of Tarboro, and in the course of our conversation we came around to the subject of treating this class of cases, when I advanced my theory of applying this old remedy to this class, told them as the authors all put down hydrophobia as hopelessly incurable, I ran no risk in trying it. They agreed with me, and advised it.

Next day a messenger came for me in a hurry, to go seven miles in the country, to see a girl 13 years old, who he said had run mad. It was raining (just pouring down) but I was there in 35 minutes. Found the girl on a sheep-skin on the carpet, in the hardest kind of convulsions, with three strong men holding her. She was trying her best to bite them, and when she could not bite, would spit at them. Was foaming at the mouth and was constantly spitting at those around her. These convulsions would last from three to five minutes, with an interval of two to three minutes between.

In the interval her mind was clear, and she would beg them to not let her bite them. The convulsions would come on with halucinations—she seemed to see a little dog, and would exclaim, "There comes that little black dog," and kept repeating it. She had a wild stare in her eyes, and a distressed countenance.

The pulse was small, quick and hard. The mucous membranes quite red, pupils dilated, no fever, but skin cold and clammy. When asked if she had been bitten by a dog recently, she replied yes; she was bitten last fall while at Mr. Green's. When asked where she was bitten, she placed her hand on the outer and upper part of her right thigh, and said, "here." When I looked she showed a well marked scar on the spot where she placed her hand—the scar being under her clothing. The history of the case is this: Three years ago she was bitten by a dog, and no one knows whether the dog was mad or not. Last fall she was bitten by this little dog of Mr. Green's, but the dog was killed a few days later while after a sheep. The bite got well without any treatment. The girl got along without any trouble until two days before she was taken with these convulsions, when she commenced complaining of feeling badly. Head ached and limbs ached. These feelings grew worse until the morning she was taken, she got up and went out to assist in getting breakfast, but complained so that Mrs. Rogers told her to go back to

her room, and go to bed. She started back to her room, and on the way she was taken with the hallucinations which developed so strongly later. She seemed to see the dog, and ran with all her might.

A young man from the neighborhood happened to be coming into the yard at the time, when she went for him, to bite him. He ran for his might and got over the fence. While she could talk, and kept constantly at it, there seemed to be a spasm in the muscles of the throat, which caused her often to utter strange sounds, resembling the bark of a dog. They got her in the house and did everything they could, or knew how, to quiet her, but she constantly grew worse. It required a strong man to her hands, one to her feet and another to h.r head, and these soon grew tired and had to be relieved. Thus matters were going on when I arrived about half past 12 o'clock.

I began treatment by administering chloroform. The convulsions at this time were very violent I brought her completely under the chloroform, and began to fix my dose of permanganate of potassium to give her hypodermically; but before I could get it ready she was off in another convulsion. I got it ready and gave the chloroform to complete narcosis, when I gave the permanganate. I kept up the chloroform for some minutes, to give the dose time to become absorbed.

In about half an hour I stopped the chloroform and let her come to. She was perfectly conscious and quiet, and talked a great deal; and told us all about the dog biting her. (I had neglected to state that this girl is a poor girl and had only been in this home, which is several miles from her former home, six weeks, and the family knew nothing about her having been bitten.) She soon grew chilly and began shivering. We threw a cover over her, but she kept up her shivering, so I told Mrs. Rogers we had better get her into her bed. We put her in bed, and in a few minutes she had a convulsion. I gave the chloroform and fixed a dose for her to take by the mouth, as soon as the convulsion stopped and without putting her completely under the choroform. I gave her the dose to drink. She drank the dose (about 5 grains dissolved in water), at about three gulps, and immediately went off into a severe convulsion. I then put her completely under chloroform, and kept her so for several

minutes, and she went off into a quiet sleep. I stayed until about three o'clock and she was still sleeping.

I fixed and left her medicine to take every two hours, and left chloroform to administer, should she have convulsions again. Kept a constant watch by her and gave the medicine every two hours. But after a few doses had been given, she grew sick at stomach, and vomited up the medicine several times during the night. But did not have any more convulstons until next morning, a little later than they began the day before; when her attendant gave her the chloroform, after which she retained her medicine again, and did not have any more convulsions until next day, still a little later, when she had one, very slight one, and did not have any more at all. On the second day, at 12 o'clock, I found her with a high fever, temperature 103 or 104 F. (I guess the temperature as I did not have a thermometer to throw away at that time) pulse 120, full and strong, pupils dilated as large as a buck shot, notwithstanding there was plenty of light in the room, tongue very red and swollen so as to completely fill up the mouth, the right leg was swollen and very painful, could not bear any weight on it, and a violent headache. I now put her doses of permanganate to 4 hours apart, and gave a full dose of calomel and rhubarb, and a capsule of quinine and acetanilid (3 grains each) between the other doses. Next day at 12 o'clock the fever was decidedly less, tongue less swollen and pain in leg less. She was better in every way. Kept up the same treatment. Next day the fever and swelling were gone, headache gone, and soreness in leg nearly gone. Kept up the same treatment another day. After this the capsules were stopped, but kept her taking the potassium salts 12 days. She made a complete and uninterrupted recovery, and up to the present time is doing well.

I have been asked since, Doctor do you think it was a genuine case of hydrophobia? My reply is, I think it was, and surely if it was not hydrophobia I do not know what it was. I have read everything I can get on this subject since, and it fills the description, and certainly is not like any other case of convulsions I ever saw before.

DISCUSSION.

Dr. Hays.—After hearing the paper, without having seen the patient, I would like to know if it could not have been hysteria. There has been a recent hydrophobia scare or epidemic in my own section, and in a family living about a mile from town, there developed some very strange symptoms. The children became affected with dancing knee, they would all bark and snap like dogs, they would jump on the table and on the mantel piece and turn double summersaults and fall on the floor and have convulsions. They had some of the same symptoms he mentions.

Dr. O'Hagan.—Hysteria assumes ten thousand different forms, and sometimes it is over the whole country. You know in the middle ages these hysterics were looked on with respect, and people were supposed to be under the influence of some divine inspiration, but we have learned better and have learned to recognize the symptoms of hysteria. I would respectfully doubt Dr. Knight's diagnosis of hydrophobia. First of all the evidences are wanting to verify the diagnosis. It is a well known fact that hydrophobia may occur at any time after a person is infected. I know of one case where it occurred in a man 21 years after he was bitten. The fact that the girl was bitten by a dog does not prove anything, does not prove that the dog was rabid, and then the symptoms followed could be doubted, and there is no case on record where there has been a recovery. I sat by the side of a poor negro who was bitten and watched him from the incipiency of the disease until he died. All these popular symptoms were wanting. He never exhibited any signs of biting, etc., but drank with avidity and without any attack. While the case is very interesting, still I doubt the diagnosis.

PSYCHO-THERAPEUTICS.—THE ANNUAL ESSAY.

By J. B. Powers, M.D., Wake Forest, N. C.

PERHAPS I should begin with an apology for daring to intrude upon the notice of this convention a subject which has been rendered repulsive by its association with empiricism and charlatanry, and has, therefore, been neglected or repudiated by a multitude of skeptics both among the people at large and in the ranks of our own profession.

Nevertheless, to a body of men, assembled for the furtherance of knowledge, a solicitation to leave for a while a field of labor, occupied mainly by material agencies, to investigate another field which abounds in unseen things, existing in a state of chaos, will not appear inexpedient. Especially will such investigations prove desirable if the fact can be established that psycho-therapeutics is worthy of elevation to the level of the attention of the general medical profession.

All truth is advanced when weighed in the balances of just criticism. Every branch of knowledge bears testimony to the potency of scientific method in eliminating false assumptions and overthrowing imposing errors. Prejudice, ignorance, antagonism, however, born of unbelief without due investigation, should never dictate what shall be endorsed as science. Therefore, every bias and misconception should be laid aside and the spirit of investigation encouraged that whatever of truth is in psycho-therapeutics may be discovered and established.

In the beginning acknowledgment is to be made that there is no working hypothesis, universally accepted, whereby every phenomenon of psycho-therapeutics can be absolved from all mystery and placed upon an assured scientific basis; it is further to be admitted that there is no general law, yet discovered, which embraces and interprets every class of pyschic observation; but there are many theories advanced to account for the variety of authenticated facts which line up in disordered array, all of

which, however, are satisfactory only when applied to one class of phenomena and partial or total failures when required to face other classes.

The domain of psycho-therapeutics, nevertheless, is not alone in presenting such an anomaly of embarrassment and obscurity during the periods of its growth. Astronomy was once nothing more than a scattered mass of observations without system or intelligent method of classification, and it was lifted from the dominion of empiricism by the discovery of the Kepler laws. Later the promulgation of Newton's theory of gravitation stirred up a revolution in the scientific world, and astronomy advanced to its place among the exact sciences. Chemistry also, previous to the knowledge of the Atomic theory, well illustrates the slow growth and interrupted progress of other branches of science during the stages of birth and infancy. Yet chemistry has grown to be one of the pillars of our faith and an important tributary to medical science.

As astronomy came from astrology and chemistry from alchemy, so in the field of psycho-therapeutics may there not be an infant branch of medical science strugling up from obscurity? And is not the way open for it to make a direct appeal to the representatives of the healing art to lift it above suspicion, take it out of the hands of empirics, and place it side by side with other curative agents?

In one form or other this infant science has played a very important part in the affairs and history of the world. But it has been met by wave after wave of opposition and been submerged again and again. Albeit, it has survived all, and again out of its poverty has arisen, encouraged by the spirit of progress and reuolution permeating every field of thought, and knocks at the door of the household of science for investigation and recognition.

The fact is plain that psycho-therapeutics is no new thing, but, perhaps, one of the oldest remedial measures of which there is any record. The name and the methods of exhibition may be new, but the principles pervading and animating it stand forth time honored and unchanged by the flight of years. In some form it seems to have girdled the earth, following the human race in all its wanderings. It flowed like a subterranean stream

beneath all the civilizations of the past, and sprang up ominously here and there into fountains of influence far famed for healing the diseases of the people on the one hand and on the other, celebrated for supernatural achievements according to the measure of enlightenment or of superstition which surrounded its activities.

Doubtless its secret ramifications far outnumber and outreach its recognized manifestations. The deeds of ancient sorcerers and magicians, and the mysterious oracles of the sibyls, the powers and gifts which followed the laying on of hands and signs and wonders wrought by manipulation among many nations, all possibly were accomplished through allied principals which chained them together under one identical influence having different modes of expression and different objects in view.

At different times in the hands of different individuals, perhaps, the basal principles of psycho-therapeutics have been made the instrument for the accomplishment of a variety of results. It was probably this identical occult power which invested the characters of mythology with mysterious influence, and clothed Aesculapius himself with the apparent supernatural gift of healing diseases, and of allaying pain by breathing on inflamed parts, or of producing prolonged sleep by stroking with the hands. Tradition says of him that he could subdue mania and hysteria by his manipulations, and gave counsel to the sick while in a trance or dream. Neither were these influences unknown to Hippocrates. He says: "It hath often appeared while I have been soothing my patient that there were a strange property in my hands to draw and pull away from the affected parts divers impurities by laying my hand upon the place, and extending my fingers toward it."

That there is some psychic force in man, which under favorable conditions, is capable of influencing the sensations and functions of the body, and which can be applied to the alleviation of human ills, seems to be a proposition which no longer admits of reasonable doubt, and evidence is furnished by all nations to support the truth of it. In early periods the saints possessed the mysterious power of healing the sick by means of prayers and ceremonies, laying on of hands and incantations, amulets and talismans, rings, relics and images. In more recent

times St. Patrick, the Irish apostle, is said to have healed the blind by laying on his hands, and St. Bernard to have restored the sight of eleven blind persons, and the use of limbs to 18 lame persons in one day at Constance. Indeed the horizon of our times has been illuminated by marvellous achievements of lesser magnitude but no less mysterious and significant.

However, mental therapeutics descends to our time in schools, not in one but many; not as one united band with a single purpose, but with divided issues and interests. They clash at different points and make war upon each other, but agree in one thing—they all claim to cure diseases, and the cures are said to be as well authenticated as any fact in history or science.

The most prominent and better known methods of healing diseases by psychical means now in vogue have been summarized as follows:

1. "Prayer and religious faith as exemplified in the cures performed by partaking of the healing waters of the famous grotto at Lourdes, and other holy shrines. To this class also belongs the cures effected by prayer alone, the system being properly known in this country as the Faith Cure and the Prayer Cure."

2. "The Mind Cure, a professed method of healing which rests upon the supposition that all diseased states of the body are due to abnormal conditions of the mind, and that the latter (and thus the former) can be cured by the direct action of the mind of the healer upon the mind of the patient."

3. "Christian Science.—This method of healing rests upon the assumption of the unreality of matter. This assumed, as a major premise, it follows that our bodies are unreal, and, consequently, there is no such thing as disease, the latter existing only in the mind, which is the only real thing in existence."

4. "Spiritism, which is a system of healing based on the supposed interposition of the spirits of the dead, operating directly, or indirectly through a medium, upon the patient."

5. "Mesmerism.—This includes all the systems of healing founded on the supposition that there exists in man a fluid which can be projected upon another, at the will of the operator, with the effect of healing disease by the therapeutic action of the fluid upon the diseased organism."

6. "Suggestive Hypnotism.—This method of healing rests upon the law that persons in the hypnotic condition are constantly controllable by the power of suggestion, and that by this means pain is suppressed, functions modified, fever calmed, secretion and excretion encouraged, etc., and thus nature, the healer, is permitted to do the work of restoration."

These several schools formulate the systems of teaching and methods of treatment mainly practised at the present day in the field of mental therapeutics; and each of these is further subdivided into sects, differing in their notions of causation, and resorting to different means of applying the principles at their command. It is not far to see that chaos and empiricism are the most marked characteristics of each sect, but the scientific man cannot fail to be impressed with the conclusion that there must be some one principle running through them all and linking them together in one common system, and it is the task of scientific inquiry to reveal this principle in its widest bearings and apply it to the benefit of medicine. For there is one pregnant fact of tremendous importance that wonderful cures have been and are now being made through the medium of these different systems, and the combined arguments of materialistic philosophers have not been able to overthrow the results nor give a rational explanation of their methods. Psycho-therapeutics, therefore, deserves to be taken up with an adequate measure of scientific spirit to determine its value.

Exceptional value attaches to invocations of divine aid in obtaining relief from incurable afflictions in all ages. All power to heal diseases at least emanates from the omniscient source of creation, and when the wails of human beings are heard at the mercy seat and their petitions granted for the asking, there is additional occasion for encouragement that there is a supernatural resource beyond the ken of our healing arts.

Narrowing down to a single thread which connects all systems and sects, and which is recognised as an essential factor in every case, is is easily perceived that belief in the success and the ability of the process to accomplish the proposed result is a factor common to them all; and the development of this belief is compassed by very different measures among the different sects, often not unaccompanied by surprises on account of con-

tradictory and antagonistic procedures, sometimes ridiculous for their absurdity. But they create belief in the mind of the patient, and this faith, however accomplished, is the one thing needful, and the first step and essential prerequisite to the success of psycho-therapeutics. Faith is the mental condition which opens the way for the action of the psychic influence, and the change follows through the operation of a force which modifies the physical condition of the patient.

Again boiling down the several systems to the tangible and practicable issues by discarding those of less importance, and in this way sloughing off the superfluous appendages, while something may be lost, perhaps, more is gained, there remains hypnotism and mesmerism as presenting the best field for investigation and representing approximately at least all the most important principles embraced by all the schools and sects.

It is well known that these exponents of mental therapeutics enjoyed an existence for a long period prior to their recognition under their present titles, but at length they are beginning to come forward to assume the position of honor in the front ranks and have really become the nucleus around which the principles and merits of the numerous sects may crystallize. Thus the initial step toward the formation of a central point for the accretions of truth as the result of further discovery in the province of psycho-therapeutics to seek deposit seems established.

By way of parenthesis, however, in order that interest may not flag and that the spirit of inquiry may be further stimulated in a subject, hitherto considered trite, as evidence of the value and potentiality of mental therapeutics to alleviate human suffering and cure diseases, it is well to state that in some parts of the world it is an every day occurence to resort to hypnotism or mesmerism to produce anæsthesia for surgical operations, and that they are employed in obstetrics not only to mitigate the pains of labor but also it is said to originate and prolong them at the discretion of the operator. Of greater interest still is the statement that cases treated by the aid of these measures convolesce with greater ease, wounds healing far more rapidly and hemorrhages both in obstetrics and surgery amounting to almost nothing.

Furthermore broader usefulness and higher degrees of advantage may result to medical science from the higher phases of development of hypnotism and mesmorism on the ground that they prove effectual in some diseases where material remedies are little more than failures. Already it is a prevolent custom in several hospitals and medical colleges in Europe and America to treat successfully such diseases as rheumatism, neuralgia, dyspepsia, bowel complaint, sick headache, torpidity of the liver, chronic bronchitis, partial paralysis, writers' cramp, and strabismus by the employment of hypnotism after unsuccessful attempts have been made with the materia medica list, in some instances. Such triumphs have already attracted widespread popular attention and can scarcely fail to induce scientific men to raise the successful agents to a place in the rank of medical science. May it not be also true that homœopathy owes much of its boasted success to the exhilarated expectations of the patient and the mental conditions which surround its ministrations?

Waiving all the material points of the history of psycho-therapeutics, and omitting further reference to the less prominent systems, suffice it to say that there are three noted schools now acting upon the principles as represented in hypnotism and mesmerism. Professor Liebault in France, following the original researches and discoveries of the Englishman Braid, published a work in 1866 in which he advanced much new doctrine, and laid the foundations of the Nancy School of hypnotism. The theory, as supported by this school, is that the physiological conditions characteristic of hypnotic sleep are produced by mental action alone; and that the results can be best produced in subjects of sound health and perfect mental balance; and that this action of the mind and the concomitant physical and physiological conditions are the consequenee in every case, of suggestion in some way. In fact the dictum of this school is the discovery of Professor Liebault: "That hypnotlc subjects are constantly amenable to the power of suggestion; that suggestion is the all potent factor in the production of all hypnotic phenomena." A number of learned scientists have become followers of this school, and Professor Bernheim the pupil of Liebault, is its able representative.

Professor Charcot, of the Paris Salpetriere, one of the most highly esteemed and widely known of living physicians, is the distinguished founder of another school of hypnotism is the result of an abnormal or diseased state of the nerves; and that many of the phenomena can be produced without suggestion in any form; and that the true type of hypnotism can only be induced in subjects whose nerves are diseased; and that the whole matter is explicable on the basis of cerebral anatomy or physiology. The fact is, during his investigation of the treatment of hysteria by means of metallic disks, Professor Charcot rediscovered hypnotism, just a century after it had been disowned by the French Academy under the leadership of Mesmer. He made bold to announce his faith, and that was sufficient to give hypnotism a scientific standing. The great name of Charcot has attracted an able following to this school, and a variety of diseases are treated yearly at La Salpetriere.

Then there is a third school having a vast number of scattered disciples, and a long train of charlatans and empyrics, which hold to the fluidic theory of Mesmer. They believe that passes made over the subject, independent of suggestion, produce the hypnotic condition by being accompanied by an intense concentration of the mind and will of the operator; that from him flows a subtle fluid which strikes the subject wherever it is directed, and produces therapeutic or other effects are reaped by contact; but that they can be produced at a distance and without the knowledge of the patient, and independent of suggestion.

Here again it is sufficiently obvious that conflict and antagonism reign among the rchools; and here again mental therapeutics bears marks of resemblance to other branches of medical science. Eclectrics, homœopaths, allopaths, and others have each in their time claimed all and disclaimed all which the other schools contended for, but the fact remained that each contained valued treasures and discovered useful knowledge, and neither possessed all power nor covered the whole field of medicine. So it is self-evident that neither of the important schools of hypnotism have compassed the sum-total of knowledge nor solved the whole problem of psycho-therapeutics but each has contributed truth and discovered facts which have as-

sisted in advancing mental therapeutics toward a solid basis as a science.

The phenomina and result of the hypnotic condition are so prophetic of useful attainment that scientists have sought for a physiological explanation of all intervening steps in the whole process of psycho-therapeutics from an induction of the hypnotic state to a transformation of diseased into healthy tissues; but unfortunately this phase of the subject seems to have yielded little more than conjecture. It is probable, nevertheless, that the involuntary nervous centers are influenced in an ill-understood manner and enabled to usurp control in a powerful degree not only of the voluntary centers but also of the entire corporeal mechanism, and whether it be over the mental operations or the functions of the physical system its force is exerted, the results are indicative of strange and unusual power; and it is to be seriously questioned, if the half that is said be true, whether of material remedies there exists an agent coequal and coextensive in effect and physiological power to stimulate and arouse dynamic forces and vital energies of the organism to their highest limit to resist and overcome disease.

The hypnotic condition brings out extraordinary evidence of exaltation of power from whatever standpoint it is viewed. Thus a subject of Mr. Braid, "a man so remarkable for poverty of physical development, that he had not for many years ventured to lift a weight of 20 pounds in his ordinary state," could when hypnotised raise a half hundred weight on the last joint of his four finger as high as his knee. So again the sensibility of the hypnotic may be exalted to an extraordinary degree, and the sense of smell, for instance, become so acute as to almost equal that of the canine species. Thus a glove or ring may be taken by the subject and their owners found among a large number of persons by scenting each. The muscular sense and sense of temperature also have been developed to an enormous extent; and the feats of memory are simply marvellous. The effects on the functions and secretions may be well illustrated by referance to a lady who was leaving off nursing her infant on account of deficiency of milk. Mr. Braid hypnotised her and made a few passes over the right bosom. In a few moments she made signs as if the baby was nursing, "and in two min-

utes the breast was distended with milk." The flow of milk continued abundant from that side, and Mr. Braid was obliged to restore symmetry to her figure by subsequently producing the same change in the other breast. Such facts are much strengthened by the unqualified endorsement of so distinguished a man as Professor Gregory of Edinburg.

In the same way an idea that any structural defect will be removed and the normal condition restored by a certain act will increase the organic action of the part, and the effort of nature in hypnotic condition to obey suggestion is excited to a high degree to accomplish such results. As it were, the idea serves as a lever which works in the cogs of a wheel turning the power of the organism forward to make a supreme effort to repair the damaged tissues which are the seat of the diseases.

It is possible that the whole problem of increased power in every direction hinges upon the enhanced strength of the sympathetic nervous system and subconscious centers of the cerebrospinal system under the influence of a dominant idea during the hypnotic condition. The advantages, therefore, to be obtained through the leverage of psycho-therapeutics may be merely an exaltation of powers which already exist and are in daily warfare resisting and overcoming the ravages of disease; and hypnotism and mesmerism are merely convenient methods of developing the state of the involuntary nervous centers in which their superior power over the physiological processes, extending possibly to phagocytosis, serum therapy, etc., can be voluntarily increased under the peculiar stimulus at their command. However, the definite knowledge of the universal action of the sympathetic system of nerves and the unconcious nerve influence, especially the office of the trophic nerves, their intimate connection with the voluntary system, and the interlapping influence of all, over the activities of the organism, is so meager that it is difficult to approximate the total consequence of a high degree of stimulation applied to them as a whole. Nevertheless, the office of the involuntary energies assumes a much more important relation toward the nutrition and control of the bodily functions than is usually assigned. Not only do they perform the functions of digestion and reproduction, growth and repair, secretion and excretion, etc., but also supply the

storehouse and soil from which the later growth of intellect and spirit are reinforced. The involuntary are continuous in action, continuous in every species of animated organism; the voluntary are intermittent in action and have appeared as tentacles and tendrils from the primary stem, apprehensive of things alien to the individual, and are more marked in the higher species of animated existence. The connection between the systems is both anatomical and vital, both functional and organic. The action of the one may influence and command the services of the other. The fibers of the one intermingle and intertwine with the fibers of the other.

This intimate connection between the cerebro-spinal and the ganglionic systems of nerves offers an explanation why excitation of the one produces phenomena in those parts assigned to and controlled by the action of the other, and this influence is frequently seen in the effects of emotion and expectation and the wave of influence beginning with the voluntary nerves is wafted on to affect the involuntary centers and the organs and processes controlled by them either to depress or exault their functions in accordance with the nature of the original impulse.

Psycho-therapeutics, therefore, begins with faith, the office of which is to prepare the patient for the reception of the treatment. Then follows the suggestion or idea which is plied by the operator with such skill as his gifts may allow. Then the idea having penetrated the mind influences the brain and voluntary nerves, and this influence spreads to the ganglia of the sympathetic nerves, and the subconscious centers, and the processes of nutrition and repair are thus linked to the suggestion to perform its biddings in obedience to the will of the manipulator. If he moves this leaver forward, he stimulates the functions to overcome disease; if he turn it backward, he depresses the vital processes or influences the energies to assert their power in some more or less striking way.

However promising and important psycho-therapeutics may be, its results may, nevertheless, seem capricious and disappointing, on account of the number and complexity of the factors which determine them. They may vary with the confidence of the operator in his own ability and in the efficacy of his method. They may vary with the attitude of mind of the

subject toward it and his ability to assume the condition of passivity, or with his physical condition. They may vary with the attitude of mind of the subject toward it and his ability to assume the condition of passivity, or with his physical condition. They may vary with the influences and circumstances attending its administration. The manifest presence of skeptics and a skeptical audience, and their adverse comments may cripple its effects or dissipate its power. Moreover, the advantage of favorable conditions is decidedly apparent. Consequently there are all degrees of its manifestation both of hypnotic sleep and of its healing power, from the faintest indications of cure to resuscitation from the cataleptic condition simulating death.

The accomplishment of a given result depends on certain antecedent steps. Music may prepare the subject for the reception of the influence, and object lessons will operate to cast away apprehension of risk in the hypnotic condition, and the result may vary according to the means employed to induce the hypnotic state, which is necessary to the action of mental therapeutics. The means employed may be both physical and psychical, but generally the one reinforces the other. The physical means embrace such agencies as affect the nervous system, particularly the nerves of sensation, by superinducing a condition of fatigue or relaxation in certain centres, which produce an inhibitory effect on parts of the brain. The conscious and objective portions surrender to the subliminal of subconscious centres.

One of the best known physical methods to induce this condition was introduced by Braid, and consisted in placing an object near to and above the eyes in such a position as to cause a continued strain upon the ocular muscles. Another method was to make pressure upon the eyelids. Many operators also make passes over certain regions of the body. The top of the head, forehead, ovarian region, root of the thumbs, and over the joints, are termed by Pitres "hypnogenic zones," because they are especially sensitive.

The representative psychical method is oral suggestion. In a word, this is mental concentration upon a fixed idea, and this idea is made to penetrate the mind, to take possession of it,

and dominate the mental organization, producing the same kind of physiological condition. In the Nancy School sugge s tion alone is employed, and when passes are made it is only to give an air of mystery to the proceedings and thus add potency to the suggestion. The Paris school employs Braid's method and have introduced other variations, such as flashes of an electric light into the eyes of the subject or its sudden withdrawal, striking a gong without warning close by the ears, or by some peripheral irritation, such as rubbing the scalp etc.

The mesmerists employ passes, stroking from the head downwards, gazing fixedly into the patient's eyes, and concentrating the mind fully upon the work in hand, strongly willing the subject to sleep etc.

It is impossible to retire the conscious mind and paralyze its influence by any of the methods used in all the schools, and faith and passivity of mind stand out as prominent factors entering into the causation of the peculiar condition which has been given the generic title of "hypnotic sleep."

The body in this condition presents three or more states. (1) The lethargic, in which motility is accompanied by increased reflexes and muscular contractility, sensibility by sharpened hearing, respiration by an increase in number and depth, and circulation by distension of the peripheral vessels. (2) The cataleptic, in which there are complete insensibility, plastic flexibility of joints and lessened reflexes, slow and superficial respiration, and slow and contracted circulation. (3) The somnambulistic, which is characterized by ready obedience to suggestion, and an increased sensibility of special senses, but diminished in the skin and mucous membranes. Absence from pain is common in all stages, but may be present or even increased in the last stages. Charcot and Richet have demonstrated that sensibility to touch and temperature is increased, often to a surprising extent.

Having secured the condition of hypnotic sleep, psycho-therapeutics accomplishes the work of healing by suggestion, often by proclaiming in a loud voice the disappearance of the symptoms, as practised by Professor Liebault. The idea of cure is made to penetrate the hypnotized mind and the energies of the body obey the suggestion, stimulating the fluids and tissues to

become resistant to the encroachments of the existing illness and to repair the lesions occasioned by it. The patient in this condition is convinced that the symptoms have disappeared, that the pain is gone, and strength and appetite are restored, but this is not all. Advantage is taken of the special psychical receptivity and cerebral docility and strange influence is exerted through the exalted ideo-motor, ideo-sensitive, ideo-sensorial reflex centers by provoking a higher order of reflex activity, and inducing the brain to strengthen its efforts to accomplish the expected cure by transforming the accepted idea into actual reality.

It is stated by Professor Bernhein that he has employed the suggestive method since 1882, which he saw experimented with by Liebault. He confesses to have begun to use it timidly, and without confidence; but now it is almost daily employed in his clinic before his students and a day seldom passes in which he does not show them some functional trouble, pain, paresis, uneasiness, insomnia either moderated or instantly suppressed by this method. To illustrate, take an example from Professor Bernhein. "A child brought in with a pain like muscular rheumatism in its arms, dating back 4 or 5 days. The arm is painful to press; the child cannot lift it to its head." The Professor begins by saying: "Shut your eyes, my child, and go to sleep." Then he holds his eyelids closed and continues on talking. "You are asleep, and you will keep on sleeping until you are told to wake up. You are sleeping very well, as if you were in your bed. You are perfectly well and comfortable; your arms and your legs and your whole body are asleep, and you cannot move." Then he removes his fingers from the eyelids, "and they remain closed." He puts his arms up, "and they remain so." Then touching the painful arm he adds: "The pain has gone away. You have no more pain anywhere. You can move your arm without any pain; and when you wake up you will not feel any more pain. It will not come back any more." The finishing stroke to the treatment was given by suggesting a feeling of warmth and an assurance of no return of pain. Then the child was awakened from the profound hypnotic condition and remembered nothing of the transaction. He lifted his arms readily to his head, and the pain had almost

completely disappeared. Next day his father reported that the pain had disappeared and the child had experienced no return of it.

While there can be little question of the efficacy of treatment by psycho-therapeutics in its less perfect forms, there are thousands of experiments in the better forms day by day which attest the value of hypnotism, and many able scientists have recognized its usefulness. By its aid the distinguished Cloquet amputated a woman's breast without pain in 1829. Esdaile employed it in 600 operations upon Hindoos with success, and it appears to be a convenient substitute for the powerful anæsthetics when circumstances weigh against their use. In medicine, functional nervous diseases yield to its influence. Hulst employed in 422 cases with good results and it proved of most service in diseases where pain was a prominent symptom. Dujardin Beaumetz quotes Reynault as having cured a case of monoplegia of the leg with amenorrhœa. Enuresis is improved and frequently disappears under this treatment; and claims of cures of inflammations are made by physicians of the best standing. Wetterstrand reported good results in chronic inebriety; and Wilkins, in Dana's clinic endorses the same statement but says the suggestion must be renewed at short intervals of time. The Stockholm, Nancy and Salpetriere clinics furnish evidence an infinitum.

In the summer of 1884 there was at the Salpetriere a criminal lunatic who was filthy and violent, and had a long history of impurity and crime. Voisin, a noted physician of the staff, undertook to hypnotize her. At the time she had to be kept in a straight jacket. She would not look at him, but raved and spat at him. "He persisted, and kept his face near and opposite to hers, and his eyes following hers constantly." In ten minutes she was in a profound sleep, and passed into the somnambulistic stage. The process was repeated and kept up for many days, and gradually she became sane while under the hypnotic influence, but raved when she awoke. Gradually she accepted suggestion and would obey trivial orders while hypnotized. Then suggestions in regard to her general behavior were presented to her mind, and in the hypnotic condition she began to express regrets for her past life and formed resolutions of

amendment, and adhered to them when she awoke. Within two years she became a nurse in a Paris hospital and her conduct was irreproachable. Voisin has reported other cases equally striking, and cured hysterical contractures and dipsomania in the same manner. Hypnotic suggestion presents claims of value in correcting vicious habits of both children and adults.

The power of suggestion over the functions of the body is written large in Bernheim's statement that he has produced a blister by applying a postage stamp on the back of a patient and suggesting that it was a fly plaster. But stronger still is the claim of Bourru that he caused a patient's nose to bleed at a certain hour, and at a different time suggested that his name would appear written in characters of blood on his arms which he had previously traced with the point of a dull instrument. At the hour stated the patient fell asleep and on the left arm the letters appeared in "bright red relief," and in several places there were drops of blood. Dr. Mabille, director of the insane asylum at Lafond, confirmed this wonderful experiment on a subsequent occasion. Bernheim observes that suggestion seems to act upon the cardiac function and vasomotor system.

The legal aspect of this matter is a question worthy of consideration also. Not only a hypnotic suggestion capable of improving the moral condition but of producing demoralization of the individual, and the development of criminal propensities is possibly within the limits of its influence.

Different views are held concerning the physiological condition of the several stages of hypnotic sleep. Bevan Lewis states: "The earliest symptoms of hypnotism appear as a result of stimulation of the ocular motor tract in the medulla. There is spasm of accommodation; restricted accommodation range. There is a stimulation of the sympathetic with exophthalmos, widening of the palpebral fissures, quickened pulse and breathing, dilatation of the pupils. Sarlo and Berardini studied the cerebral circulation during hypnotic sleep in an epileptic who had an opening in the cranial vault produced by a fall. With a bright light they induced the lethargic and cataleptic stages but failed to produce the somnambulistic stage. During the larthargic stage the brain presented the condition of hyperæmia; during the cataleptic, anæmia. They concluded, with

Tamburini that hypnosis only renders more marked the reflex excitability existing in the individual in the inhibited state. Kramp explains hypnosis as a result of the change in the cerebral circulation. His belief is that those parts of the brain undergoing diminished functions in the hypnotic state receive their blood supply from branches of the internal carotids, and the lower centers receive theirs from the vertebrals; and that the carotids are contracted in hypnosis and the flow of blood increased in the vertebrals. The surplus blood being forced into the external carotids explains the flushed face and the appearance of the eyes, while the hyperæmic condition of the medulla and cord produces the muscular rigidity which is further accentuated by the loss of inhibitory control by the higher centers.

Others discredit the cerebral circulation theory and assign the cause entirely to the influence of the nervous system. The discovery of the movement of nerxe cells in 1890 by Rabv-Ruchard in Germany and the subsequent confirmation of the fact by Lepine and Deval in France in 1894, and again in 1896 by two French physicians, Azoulay and Pupine together with the significance of the explanation with reference to hysteria not only supports Charcot in his view of the analogy of hysteria and hypnosis, but also seems to throw light upon the production and operation of hypnotism.

Rabl-Ruchard advanced the idea that nerve cells changed their shape in a manner resembling the amœba. Lepine claimed that the neurons, which are the means of connection between nerve cells, were capable of movement to such an extent that those connections were interrupted.

Furthermore, it is found that the motor area of the cortex presents protoplasmic extensions directed outward towards the surface of the cortex, the dendrites, and also a protoplasmic extension downward, which becomes a nerve fibre. The latter is really a process of the cell-body, however great its length, and is known as an axon. It passes downward through the white matter of the brain, the internal capsule, the crus, the pons, the medulla, and the cord and terminates in a bush-like extremity, the end-tuft—which establishes a communication between the cortical cell and the motor nerve cells in the spinal cord.

Now, in a state of hysteria the neurons of the particular centers of the cortex in control of the parts affected are retracted, it is believed, in such a way that the end-tuft in the spinal cord no longer maintains its normal relations to the spinal neurons. This breaks the connections between the cells, and the result is an abnormal condition which accords with the peculiar combination of the cell action which prevails. As a result of suggestion, either with or without hypnotism, or spontaneously, the hysteria disappears, and the reason for it is, the processes of the nerve cell, particularly the collaterals, and it may be, to some extent by the dendrites.

Disturbance of the action of neurons from any cause must produce a consequent variation of the nervous condition. If the nerve cells become exhausted by fatigue, and their volume and cell contents have diminished, as has been observed by Hodge (*Jour. of Norphology, 7:95; 9:449.*) evidently their processes retract and no longer remain in relation to one another as before. The neuron separated from its connection thus must be without function. General retractions of all the neurons must mean total loss of function, unconsciousness, with proper degree of retraction may mean sleep, with certain modifications and combinations of neurons must mean hypnotism or artificial sleep, with diseased neurons means insanity, with neurons irritated by toxic products means delirium, with faulty combinations to a degree which leads to imperfect recognition of objects means illusion, with perfect combinations under a higher order of stimulus means exalted consciousness and acute perceptions—all governed by the area of the cortex to which the stimulus is applied. In sleep, therefore, both natural and artificial the neurons are retracted; in consciousness their processes are extended: and in all subconscious conditions the neurons are obedient to the stimulus acting upon them.

There is still another view held by the distinctive followers of Mesmer that there is a fluid or force accompanying the induction of the mesmeric state, and that it plays an important part in the explanations of the attendant phenomena. It is claimed that Liebault, the apostle of suggestion, admitted that there was a specific influence exerted by the mesmerizer upon his subjects which did not come within the range of his law of sug-

gestion. Furthermore, it is contended that there are two factors which enter into healing by mesmerism and healing by hypnotism. The one seemingly depends upon oral suggestion for its effects and the unaided power of the hypnotic condition over the functions of the body; and the other upon another force which exerts a positive effect upon the body, filling it with vitality. Confirmatory evidence is offered in a striking experiment. A patient was blind folded and his hands placed upon a table with the fingers spread wide apart. The mesmerizer then made passes over one of the fingers with care to give no indication to the subject either by touch or atmospheric current which finger was to he affected. The result was local anæsthesia in the finger operated on, and in no other. Repeated experiments attested the accuracy of the results.

Another trial was made in which some one else guided the finger of the mesmerizer without his knowing which of the patient's fingers he was to affect, and the selected finger was unchanged.

Two facts were regarded as established by the experiments. The first one determined that there was an effluence emanating from the mesmerist and the second that this effluence was in some way connected with the will or intelligence of the operator.

What such effluence consists in, if it exists, is unknown. That it is a vital fact underlying psychic phenomena is believed by some. But like other subtle forces it defies analysis. It seems to possess qualities similar to magnetism, and is stored up in and originates with the subliminal personality. It appears to be analogous to, if not identical with the same force which under other conditions has seemed to afford a basis, in the minds of some, for the cult of spiritualism. To what form of this force many phenomena are due is still unsettled, notwithstanding the findings of the Seybert commission.

One important question of the day is how are those psychic manifestations produced, and what is the force which underlies their operation? Does the influence of kinetic energy extend to the dominion of psychology also? Do electricity and magnetism stand as janitors at the gateway to further exhibitions of a correlative force the shadows of which are thus being cast before it? May not psychic energy be more nearly skin to elec-

tricity and magnetism than is now known, and the brain and nervous apparatus constitute a kind of dynamo and Leyden jar for the generation and storage of the unknown fluid? There are such things as electric eels and electric fish. They carry within an animal organism a sort of battery for the induction of electricity. Are they alone in possessing this faculty, or are there other representatives of the animal kingdom capable of exhibiting a degree of kindred force? There is an ascending and descending scale in the physical endowments, and may there not be an ascending and descending scale in psycho-physical energies? There are gradations in the orders of material things, and may there not be gradations and similar differences in immaterial things? May there not be co-ordinate forces following in successive steps to electricity, magnetism, etc., some of which answer to the effluence of the mesmerist and are capable of influencing the welfare of human beings in a different way from present knowledge of the action of electricity?

There is an hypothecated project of conveying telegrams by ether waves without wires. Every stroke of the battery here is born on the wave to the sensitized and receptive surface in the distance, and an accurate message is recorded. In like manner may it not be possible that an electrified, animated brain may set in motion ether waves, which directed by the will, may leap over space and annihilate time and register the thought upon a sensitized and prepared plate in another brain in the distance? Telegraphic communication is a mysterious occurrence associated with the subjective condition, and sheds light upon "absent treatment," or treatment of the sick person without the knowledge of the patient. Experiments by the London Society for Psychical Research have furnished data to stir the mind of European scientists to recognize the claim of Telepathy, but want of space forbids more than its mention.

The higher manifestations of the hypnotic condition furnish a striking similarity to the strange occurrences of trance, clairvoyance, clairaudience, vampirism, demonism, obsessisn, catalepsy, and suspended animation. Indeed, hypnotism opens the door of investigation to a new field full of problems, and the physician of true scientific spirit ceases to scoff at marvellous psychological phenomena. Hysteria lies near the border line,

suspended animation afar off in the deeper waters, and clairvoyance, catalepsy, etc., float about in unexplored regions between.

Till we understand further, let us continue opium, calomel, etc., but my brethren, do we not catch light here of the shore of a new world? Hypnotism is a telescope. Look!

REPORT OF THE SECRETARY OF THE NORTH CAROLINA BOARD OF HEALTH FOR THE YEAR 1896-97.

RICHARD H. LEWIS, M. D., Raleigh, N. C.

SINCE our last annual meeting the Board has accomplished rather more work than during any period of the same length in its history. A statement of most of this in detail will be found in the sixth biennial report covering the part of 1896 belonging to our society year and therefore it would be a work of supererogation to do more now than simply recapitulate what was done. Owing to the extent of this work the appropriation for 1896 together with the balance on hand from 1895 was more than exhausted so that a good deal of the expense had to be met out of the appropriation for the current year. In consequence of that fact we have not been able to undertake, since the first of January last, anything outside the usual routine. Practically, therefore, a full statement of all the work for our past fiscal year will be found in the Biennial Report.

With the exception of the convict camps which had to be omitted for want of money to pay the necessary expenses incident thereto all the State Institutions were visited and inspected by Committees from the Board appointed by the President for the purpose, viz: The North Carolina Asylum for the insane, the Institution for the Deaf, Dumb and the Blind at Raleigh, the Penitentiary, the State Capitol, the University, the College of Agriculture and the Mechanic Arts, the State Normal and Industrial College—twice, once to specifically advise as to the best method of sewage disposal and once to make a general inspection,—the Agricultural and Mechanical College for the Colored Race, the School for the Deaf and Dumb and the State Hospital, at Morganton, the Eastern Hospital at Goldsboro and the Oxford Orphan Asylum. In addition upon request the Board advised the proper authorities as to the best method of sewage disposal for a new building recently erected for the medical department at Davidson College; and the County Commissioners of

Johnston County in regard to the removal of the jail to another site.

Believing the purity of all drinking water and especially the public water supplies to be of paramount importance to the public health and realizing that many of the municipal supplies in our State, owing to the source of supply, were peculiarly liable to contamination the Board at the last annual meeting ordered an examination made of them. This was done, not with the expectation of doing anything like thorough work (our limited appropriation forbidding that) but for the moral effect upon the water companies that would be produced by the simple knowledge of the fact that the State, having more regard for the lives and health of its citizens, their consumers, than for the size of their dividends, had an eye upon them. In obedience to this order a bacteriological examination was made of all the municipal supplies in the State. Of the fifteen four were found to contain intestinal bacilli and four to be suspicious, and were so reported by the Secretary to the Board at a meeting held in Charlotte on Oct., 15th-96 at the time of the health conference there. As the result of this report the Secretary was instructed to have made immediately another bacteriological and a chemical analysis of all the infected and suspicious waters, and he was further ordered, in those cases where the water was shown to be still bad, to notify the Superintendent of Health, the Mayor and the manager of the water works of the fact and call upon them in the interest of the public health to remedy the trouble, and, if he did not receive satisfactory assurance within thirty days that this had been done, to have the analyses published in the local papers for the information of the people using said waters. While seven or eight sent samples for the bacteriological examination—the Board furnishing the sterilized bottle—only two sent samples for the chemical examination. This second examination revealed the gratifying fact that the intestinal bacilli had disappeared in every instance and the condition of the various waters was much improved.

In view of the difficulties of one kind and another encountered by your Secretary in obtaining samples rightly packed and shipped in the investigations referred to he would respectfully suggest that in case of another such examination that the samples

be collected, packed and shipped by a member of the Board. Although this would add materially to the expense it would in his opinion be money well spent as the works including water shed, could at the same time be inspected.

Besides these examinations of municipal water supplies bacteriological analyses were made of three seriously suspected wells, one at the Oxford Orphan Asylum, one in Asheville and one in Burlington and the water of each was found to be unfit for use.

Samples of water from a well in Oxford, one in Rowan County and one in Winston containing insects and worms visible to the naked eye were sent to the Secretary for an opinion. He being no entomologist requested Dr. H. V. Wilson, the able Professor of Biology in the University, to make the identification for him. This he courteously and cheerfully did without charge and deserves the thanks of the Board.

In order to take stock and strike some kind of balance, so to speak, your Secretary addressed a circular letter to several hundred physicians residing in the eastern section of the State asking their opinion as to what effect in the matter of improving the drinking water and preventing sickness and death had been produced by the pamphlet on Drinking Water in its Relation to Malarial Diseases which, together with other health pamphlets, had been widely distributed in 1895. Only fifty-six replies were received up to the end of the year and evidence was, in the nature of the case, far from ideal in quality, but it nevertheless plainly showed that in a great many instances a better domestic water supply had been provided and that much good had been accomplished in the saving of health and life.

In October last Dr. R. H. Whitehead of the Medical Department of the University kindly offered through the Board to make for any physician desiring it free of charge the serum diagnosis test for typhoid fever and "to make the laboratory useful in any other way so far as my (his) time will permit." His generous offer was accepted with thanks and notice thereof with directions was given through the Bulletin, a copy of which is mailed monthly to every member of the State Medical Society. Very few however we regret to learn availed themselves of the offer.

With the beginning of 1896 a new departure in the collection of vital statistics was made for the purpose of securing more

trustworthy reports by requesting reporters to sign at the bottom of each monthly report a certificate to the effect that the report included "the whole number of deaths ocurring in the coporate limits during the above month." Since that time twenty-four of the twenty-seven towns making mortuary reports have certified for the accuracy of their reports. A consideration of these most reliable statistics has confirmed the fact to which attention was called in the Fifth Biennial Report that the death rate from tuberculosis was very much higher among the negroes than among the whites—to be exact the proportion in 1896 was 3.33 to 1. The statement made in the same report that the negro seemed to be much less susceptible to diphtheria than the white man, the number of deaths from that disease recorded in the two years 1893-'94 being whites 22 colored 0 was also confirmed by the figures of 1896, the deaths from diphtheria during that year being respectively 13 and 1.

As has been the case every two years since the Board was organized the meeting of the Legislature was anticipated with more or less uneasiness. Subsequent events however did not justify the feeling for no hostility to the Board and its work materialized. It is true that the law was so amended as to take the election of the county superintendent of health out of the hands of the county board of health and give it to the county commissioners and at the same time give them absolute control of the salary of the superintendent, but while, looking at the matter from every point of view the change in our best judgment was inadvisable, still the reasonableness of the contention that the body paying an official should have the selection of that official and the fixing of his salary, looked at from that point of view of the business man, cannot be denied. With this exception the Act Relating to the Board of Health was not interfered with. In the matter of new legislation along sanitary lines an attempt was made to have laws enacted for the Prevention of Blindness, for Compulsory Vaccination and for the Protection of Public Water Supplies, bills for the two latter being prepared by your secretary at the request of the Hon. Thos. H. Sutton, one of the members of the House from Cumberland. The first named was still born, the second was promptly defeated and the last while it was reported favorably by the Committee on Public Health

and was endorsed by every one approached on the subject, could not be gotten up owing to the press of other business in the last month of the session. In this connection we feel that our acknowledgements are due to many enlightened friends of all parties and to none more than to Dr. Abner Alexander of Tyrell who was always keenlya live to the value and importance of our health and medical laws.

In conclusion it is due His Excellency Governor Russell that we should express our appreciation of his evident desire to keep politics out of the Board as shown by the truly non-partisan appointments of members to fill the vacancies caused by the expiration of the present incumbents. We trust that this may ever remain so whatever the political faith of our Chief Executive and that the usefulness of the Board may remain unimpaired.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

THE Board of Medical Examiners met in annual session at Morehead City on June 7th, at 9 o'clock, p. m.

Those present were, Drs. Julian M. Baker, President; H. B. Weaver, Secretary; Thos. S. Burbank, D. T. Tayloe, Richard H. Whitehead and T. E. Anderson.

A vacancy on the Board being announced by the President, caused by the death of Dr. J. M. Hays, after appropriate remarks by members of the Board on this announcement, Dr. Burbank nominated Dr. Kemp P. Battle as a member of the Board to fill the unexpired term of Dr. Hayes. There being no further nominations, on ballot it was found that Dr. Battle was unanimously elected as a member of the Board.

On motion of Dr. Weaver, a committee of three, Drs. Anderson, Burbank and Tayloe, were appointed to draft suitable resolutions of respect to the memory of Dr. Hayes, and that they be spread on the minutes of the Board.

Dr. Battle was assigned to the Chair of Chemistry. Dr. Weaver opened the examinations on Tuesday morning at 9 o'clock on Obstetrics, Gynecology and Pediatrics. Dr. Baker held his examination on Surgery in the afternoon of the same day. The examinations were continued on Wednesday by Dr. Whitehead in Anatomy, Dr. Burbank in Practice of Medicine. On Thursday Drs. Anderson, Tayloe and Battle held their examinations on Physiology, Materia Medica, and Therapeutics and Chemistry, respectfully.

Dr. Weaver conducted practical demonstrations on the Manakin.

On account of inability to attend the meetings, resulting from an accident, Dr. Pendleton was granted a continuation of temporary license till next meeting.

Dr. Hiden was granted an oral examination on account of sudden illness.

There were 82 applicants, and the following were granted license:

Clarence P. Jones, Rockingham, N. C.; Sterling B. Pierce, Weldon; S. N. Harrell, Coakley; J. C. Davis, Irondoff; Wm. W. Barrett, Monroe; A. E. Bell, Charlotte; James H. Hiden, Richmond, Va.; P. C. Hutton, Goldsboro; James N. Judd, Enno; R. E. Zachary, Chapel Hill; O. J. Paris, Gath; B. T. Bitting, Mizpah; M. L. Justice, Perue; Charles L. Pearson, Asheville; A. B. Goodman, Saunders; A. D. H. Whitley, Boaz; W. J. Weaver, Asheville; A. C. Bethune, Aberdeen; James Sawyer, Asheville; Rueben A. Campbell, Statesville; J. Pinkney Turner, Cool Springs; James E. Smithwick, Jamesville; Henry T. Batts, Bayview Asylum, Baltimore, Md.; Peter John, Laurinburg; W. J. Wallis, Brevard; Charles Robinson, Chapel Hill; W. W. Dawson, Grifton; Theo. L. Northrop, Laurinburg; James S. McGeachy, Lumberton; William Isaac Hill, Morgan's Mill; J. B. Person, Jr., Freemont; L. O. Hayes, Lacuma; H. N. Bonner, Aurora; Henry F. Kinsman, Hamlet; R. D. Patterson, Liberty; S. P. Holding, Wake Forrest; J. B. Wallace, Sardis; George Kennedy, Way Cross; J. T. Hood, Fayetteville; George D. Williams, Gatesville; Jas. E. Brooks, Siler City; R. L. Savage, Hobgood; C. R. Wharton, Ruffin; G. A. Brown, Bear Poplar; R. H. McGinnis, University Hospital, Baltimore, Md.; Wm. Spicer, Goldsboro; W. V. Powell, Asheville; A. C. Everett, Laurinburg; L. N. Gleen, Crowder's Creek; R. C. Bunting, Wilmington; W. P. Webb, Rockingham; J. E. David, Asheville; John E. Hart, Monroe; Robert D. Jones, Newberne; J. O. Matthews, Taylor's Bridge; Stonewall J. Love, Long Store, F. D. Koonce, Richlands; R. E. L. Flippin, Pilot Mountain; G. A. Garen, Greensboro; L. V. Lee, Lattimore; David S. Morrell; Fairmville; Allen H. Wyche, Henderson; B. R. Hunter, King's Mountain; W. H. Lippitt, Pittsboro—total, 64. Eighteen were rejected.

Dr. R. Duval Jones having made the highest general average grade (97), was awarded the Appleton prize, consisting of a set of books ($25).

Dr. Charles Robinson, Chapel Hill, was awarded the second prize by the G. F. Harvey Co., consisting of a buggy case. Dr. Robinson was also awarded the prize in Surgery given by

the William Armstrong Co., consisting of a Gerster emergency case with sterilizer.

The prize for the best examination in practice was awarded to Dr. James Sawyer, of Asheville, consisting of a set of four volumes of Hare's Therapeutics, offered by Lea, Bros. & Co., Philadelphia.

The appointment to the Wilmington City Hospital was awarded to R. E. Zachary. Also Dr. Zachary was awarded the prize consisting of a pocket case of instruments and a year's subscription to the JOURNAL for the best examination in Anatomy, given by THE NORTH CAROLINA MEDICAL JOURNAL.

At a late hour Saturday night the Board adjourned to meet in Charlotte in May, 1898.

H. B. WEAVER, M.D., Secretary.

NORTH CAROLINA BOARD OF HEALTH.

Conjoint Session with the Medical Society of the State of North Carolina.

THE conjoint session was called to order by the President, Dr. G. G. Thomas, who said:

The State Board of Health is so thoroughly in the hands of the Secretary that an address from your President seems an imposition on your time. I wish that the entire membership would stay, for the questions of sanitation are certainly as interesting and as important as surgery or medicine. This Board, you know, works under great difficulties, often against the adverse criticism of politicians. It looks now to those of us who are studying the signs of the times that we are now getting nearer the promised land. Several years ago, as you are aware, the health conference was instituted, and only a lack of means has made the conferences so few in number. We believe that they have accomplished a great deal. If they haven't taught any great lesson to the people, they have made them think. In every community we have entered, we feel sure that we have left some seeds which will grow into a harvest of indefinite size. I have only one thing I wish to say, and that is in regard to the extension of the State Law in regard to communicable diseases. Last year at a meeting of the Board at Winston, I took occasion to remark that it would be a good thing to add measles to the list of quarantinable diseases. This is not a move that will commend itself to the general practitioner, and more especially to the elders in the profession. I say it with all becoming respect and reverence for these gentlemen. They generally agree with what I have heard said of a surgeon in one of the Confederate camps who went into the hospital and found a great number of country lads who had never been exposed to the poison of measles, and they were very sick. Another day brought an increase, and another day still more, and the surgeon wanted to know what in the world their mothers meant when they did

not see that they had had measles in their childhood. That expression, I am sorry to say, is common among the profession, notwithstanding the fact that the deathrate is large. I do not know the statistics of the last epidemic, but I know that there are many saddened households left by that last march through the country. According to Stevenson and Murphy, mortality in Great Britain and Wales amounted to the large number of from six to ten thousand deaths in different epidemics. This does not take into account the number of people who were left with serious pulmonary trouble, and otherwise disabled I believe in towns of any size it is possible to quarantine measles as easily as scarlet fever. It does not require so much care to quarantine from scarlet fever, now that it is reoognized that the law is fixed. I know that the ravages of measles were marked by a great deal of disaster, coming as it did at a very inopportune season—in winter. I think it would be wise for the conjoint session to consider whether measles should not be added to the list of diseases that must be quarantined. So far as other diseases, whooping-cough, mumps, chicken pox, etc., are concerned, they might wait later. People will have to be educated up to this, and present education will not allow stringent measures to be adopted, but I think it will be a progressive step if the Board of Health adds measles to the list of quarantinable diseases. I believe that the time is coming when we will have to take this step.

Dr. O'Hagan.—I think my friend must have meant something personal when he mentioned the Confederate surgeon. I think the first step that ought to be taken should be to make it compulsory with every family to see that they had measles. Such, I have no doubt, is directly antagnostic with your views on the subject. If my friend Dr. Thomas had had to go through with the terrible ordeal of bringing three regiments through in 1861, and didn't agree with me in this, he would at least sympathize with me. This is preliminary to my idea of putting measles on the black list. I do not think it will do. The prevailing feeling is that it is not a very formidable disease. The popular view will not support it; and I do not think it is best to push things too far, for there is danger of kicking. There is a wholesome dread of scarlet fever in the popular mind, and they don't object to any restrictions on that, and also on diphtheria.

Typhoid fever can be quarantined, but we must not interfere with measles and whooping-cough: they belong to the domestic faculty, and we must not intrude upon the premises of their rights.

There is a matter of great importance for discussion now and that is the utter inefficiency of the County Superintendents of Health, and the carelessness and indifference to making monthly reports even remotely or approximately correct. I am tolerably well acquainted with the work of the County Superintendent of Health in our county, and I think you will agree with the statement I am about to make. I regret to say that politics enters two much in the choice of these Superintendents; they go into it for what they can make out of the office, and that is not a great deal. As to getting reliable statistics, their labors are utterly useless. Those from my county are not worth one cent, and I have no doubt that you gentlemen from the other counties will corroborate my statement. I do not know how it is to be remedied. It is almost impossible to get any reliable information. However, we are just at the beginning of this work and I hope we will improve, but I have no suggestions to make in regard to the improvement. Young men are optimistic and old men are pessimistic. I think the first step toward getting any correct data or any legislation upon it, would be to urge upon the County Superintendent of Health the importance of absolute accuracy in the monthly reports. I know that those from my own county are utterly worthless, and I have no doubt that it is true from all others, with the exception perhaps of Wilmington.

Dr. Burroughs.—I have listened to the remarks in regard to the quarantining of measles, and I have listened to what Dr. O'Hagan has said. I think that measles is a disease of more gravity than most physicians regard it, and it is the duty of the Board of Health to quarantine measles whenever practicable. Measles gets into a community, it prostrates the majority of the inhabitants, and I know of no better way of illustrating the use of quaratine than by giving you an instance of two schools of which I have the honor to be the physician. One has about 140 or 160 girls, and the other 200 to 225 young ladies. Measles last year got into this school of older girls, and 63 of them had it and were kept from their studies. Several developed pneumonia in connection with catarrhal bronchitis. It kept them

from their classes, and some of them had to be sent home, and it demoralized the whole school. The other school quarantined against the Normal and Collegiate Institute, in which the measles appeared, and I visited first the school that had no measles. As a result the smaller school though only 89 yards away and with 150 girls, developed not a single case. They were allowed to go on with their work. I think something of this kind could be done in keeping it from household to household. It is carelessness on the part of the Health officers to allow measles to become scattered over a town. If you have a thorough quarantine at first, the disease will be easy to control. Unless you come in contact with it, you don't get it. If you would quarantine it just as you do scarlet fever we would not have so many constitutions undermined and so many cases of catarrh and pneumonia, laying the way for invasion by tubercular baccilli. I am in favor of quarantining measles.

Dr. Murphy.—I am inclined to agree with both gentlemen. I have had pretty much the same experience that Dr. O'Hagan has had. I have gone through with two epidemics of it in the hospital for the insane. I had the impression that measles was contagious, and that all would have it, so I made no effort to quarantine. About that time, I visited the Georgia hospital, where they have about two thousand patients. The doctor told me that some of his nurses had measles and they were trying to keep it from spreading. I said that that was useless. He said he was going to do it anyway, and sometime afterwards I asked him the result, and he said they had not had another case. So it seems to be of some use. In that hospital there are quite a number of buildings and they are all mixed up, and I don't even now understand how he did it, but he is a truthful man.

Dr. Munroe.—While I think that measles should be quarantined, and that inside of five years we will quarantine measles, I doubt whether the public mind is educated up to that point yet. In regard to the mortuary statistics, the trouble is to get competent men. In our section of the State, notwithstanding the registered physicians elect them, there is always a political scramble for the place. No reputable physician is going to try for it, and I believe that the people in the jail and in the poor house ought to have the best medical attention from the best medical talent in North Carolina.

Dr. McDowell.—There are only half a dozen physicians in the county that report to these county superintendents of health, and how are they going to make any report that way? They don't make any reports of contagious diseases or any mortuary statistics to health officer. I want to know if that is not our fault, I mean that we don't have better statistics. I know I have done very little reporting. If there is a case of scarlet fever, we telegraph him, and the quarantine takes place immediately. I think we ought to have a better organized county medical society in every county, and the work that came before them would be worth a great deal to the State Board of Health. It is with the physicians at large that this lies. I don't think the superintendent of health does anything now except attend to the poor house and jail. It seems to me that we as individual physicians could uphold the State Board of Health if we would pay the proper attention to our duties along this line. In these counties, it is a right hard matter to visit all parts of it and get the statistics and the number of cases of various diseases, and all this and the regulation of health matters, including the water supply will rest with the physicians in the various localities. It might be easy to quarantine measles in a town, but if you try it in a country town the difficulties will increase. You never know anybody has measles until the eruption appears. All the other children are in school with this child, and who is going to be quarantined? All his playmates and associates in school have flocked around him to sympathize with him because he is not feeling well, and have all become poisoned. Every child there has come in contact with him. You do not see but about one in ten who has measles, and it is almost impossible to quarantine. In a family where the daily bread is dependent on the labor of the father or the mother or some of the larger children, none of whom have had measles, what are you going to do? In factory towns where most of the children work in factories, suppose you have them quarantined, how are you going to feed all these people? How are you going to take care of them? With the mother and larger children working for their daily bread, it seems to me that in a town of one hundred families of this kind, with two or three thousand inhabitants, you will have a hard time to support these people, and it seems to me to be almost impossible to quarantine in small towns.

Dr. Burroughs.—It is no more trouble to quarantine a small town than it is any other. If you quarantine the first cases, you can get hold of the others pretty soon. As soon as the people realize that measles is a contagious disease and that the children who have it will be stopped from school, they will recognize it as such and send for a doctor at once, and the thing will be easily put under control. In regard to mortuary and vital statistics. There is no way of getting them without further legislation. You must have township cemeteries, and a man in charge of each who would give a certificate of death for each one buried. There is no other way of reaching the mortuary statistics but by having township and not church and private burying grounds.

Dr. Thomas.—I want to say a little more about this quarantine. If you didn't quarantine in diphtheria and scarlet fever, you would have just as wide spread an epidemic as you would in measles. The public mind has more dread of these two because they are more mortal. I still believe a great deal could be done in the counties if the physician who by law constitute the county board of health would have readings and discussions of these questions and urge the superintendents to more work. Your mortuary statistics will be more thoroughly quoted. In our organization the thing had to be done in years and years; it is not a thing which can be done in months. I believe that now the work of this Society and the Board of Health is being appreciated by the people of North Carolina. I would like for the question to be still further agitated.

REPORT OF OBITUARY COMMITTEE.

Mr. President and Gentlemen:

Your Obituary Committee, in an effort to perform the sad duties of their office, sent to each member of the Society a request that he would send to the Committee the name of any member of the Society, whose death had occurred since our last meeting. Not one response has been received, and we have, therefore, to report the death of only one member during the past year. We render our most hearty thanks to our All Wise Master that He has left our ranks so nearly unbroken.

With much surprise and sorrow we read in the daily papers of May 15th, the announcement of the death of

DR. JAMES MCINTOSH HAYS.

Never has this Society lost a more useful and loyal member. Though young in years he had done much to distinguish himself, and rendered much service to the Society.

Dr. Hays was born in Oxford on the 9th day of March 1863, and was, therefore, thirty-four years of age at the time of his death. His early education was received at Horner's School, in Oxford, where he easily ranked first in his classes. In his laudable desire to do all things well, he laid the foundation for his medical education by serving eighteen months in a drug store in his native town, and then taking a special course of two years in chemistry at the University of North Carolina. He afterward attended the Medical College of South Carolina, at Charleston, and graduated with first distinction in 1883. He won the appointment to the Charleston City Hospital, which position he filled with much credit. At the expiration of his term of office in this hospital, he began practice near his home, and soon manifested those sterling qualities which were destined to place him in the front rank of his profession. He presented himself before the Board of Medical Examiners at the Durham meeting in 1885, obtained his license and became a member of

the Society the same year. Since that time his love for the Society and his zeal in her behalf have never waned. To quick perception and good judgment he had added a forceful manner of expressing his ideas, which early made him a prominent figure on the floor of the Society, and drew around him a strong backing of admirers. His popularity is attested by the various honors which the Society conferred upon him. In 1887 he was elected Orator; he served as Secretary from 1890 to 1892; and as an evidence of the Society's confidence in his ability, he was chosen, in 1894, a member of the State Board of Medical Examiners, to serve six years. He had served only three years when death claimed him.

Dr. Hays practised at various places but finally settled in Greensboro, where he devoted much of his time to diseases of the eye, for which practice he had prepared himself by special study in this country and Europe. Among his contributions to medical literature were the essay to which was awarded the Pittman Prize, and the report of a case of Cæsarean section after the death of the mother, a living child being delivered to survive several weeks.

In token of the Society's appreciation of his many excellent qualities we move the adoption of the following:

Resolved, That in the death of Dr. James Mackintosh Hays, the Medical Society of the State of North Carolina has lost a most loyal and energetic member, whose labors have been ever directed to raising the standard and sustaining the honor of the profession of the State, and especially in promoting the welfare of the Society.

Resolved, That, as an evidence of the Society's appreciation of the services rendered by the deceased, his portrait accompany the publication of this report in the printed transactions of the Society, and that a copy thereof be placed in the hands of his family.

In continuation of our report, your Committee begs leave to ask that the Society take action at this meeting upon the death of

DR. CHARLES DUFFY, SR.

which occurred in Newbern, August 24, 1892. The lateness of this action is due to the fact that at the Raleigh meeting of the Society, in 1893, a committee was appointed to prepare suitable

resolutions to present to the Society, but were unable to do so before adjournment.

Dr. Duffy was born in Ireland, on the 2d of September, 1808, lacking only one week of reaching the ripe age of 84 years. He was descended through his mother and maternal grandmother from the McIlweans, one of the oldest North Carolina families. His parents removed to North Carolina when the subject of this notice was 25 years old. Dr. Duffy received his medical training in Dublin. On his arrival in this country he settled at Richlands, N. C., afterwards removing to Catharine Lake, where he continued to do a general country practice until shortly before his death. His practice was very extensive and he was ever ready, like the true physician, to respond to any call of suffering humanity. He was a skilful physician and surgeon and performed many serious and difficult operations. He was an upright, conscientious and brave man, with a sociable, open-heated and very charitable disposition, a strong devotion to duty and a high sense of honor. He was a staunch member of the Presbyterian church, and for many years a trustee of Davidson College.

A member of a very large family himself (he had thirteen brothers and sisters) he had born to him five sons and three daughters. Among his sons are two of the most distinguished members of this Society.

We present the following resolutions for your action:

Resolved, That, in the death of Dr. Charles Duffy, the North Carolina Medical Society has been deprived of a member whose unsullied name, high integrity, and unusual professional skill, has been an honor to the Society and the profession of the State, and whose noble character and unselfish faithfulness in his chosen profession make him an example well worthy to be emulated by the younger members of our profession.

Resolved, That a page in the minutes of the Society be set apart, upon which shall be recorded his name, the dates of his birth and death, and the date of his admission into this Society.

In closing our report, we would respectfully urge upon members the importance of the aid of each member in enabling the Society to perform her last sad duty to her fallen sons. It is as little as we can do to place upon our records an expression of

Charles Duffy, M. D.

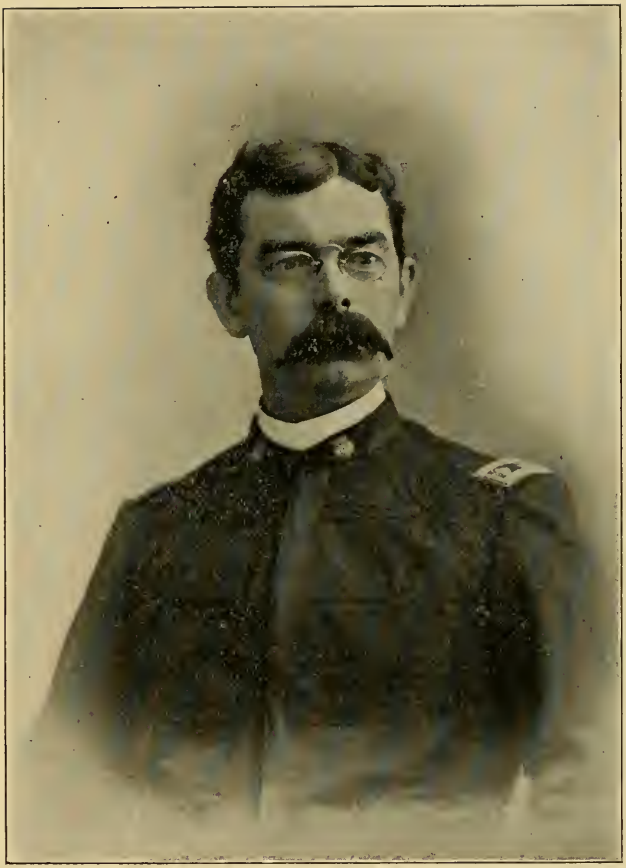
BORN SEPTEMBER 2, 1808. DIED AUGUST 24, 1892.

ADMITTED TO MEMBERSHIP IN THIS SOCIETY 1886.

our esteem for those who fall in the ranks, but even this little cannot be done, unless we all will, on learning of the death of a member, report the fact to the Secretary of the Society, so that the Obituary Committee can obtain their names and the necessary data from which to make their report.

Very respectfully,

R. S. YOUNG,
R. D. JEWETT,
K. P. BATTLE,
Committee.



James McIntosh Hays, M. D.

CONSTITUTION.

ARTICLE I.

TITLE OF THE SOCIETY.

The name and title of this Society shall be "The Medical Society of the State of North Carolina."

ARTICLE II.

OBJECTS OF THE SOCIETY.

The objects of this Society shall be the advancement of medical knowledge, the elevation of professional character, and the promotion of all measures of a professional nature that are adapted to the relief of suffering humanity, and to improve the health and protect the lives of the community.

ARTICLE III.

MEMBERS OF THE SOCIETY.

SECTION 1. This Society shall consist of Active and Honorary members, and Honorary Fellows.

SEC. 2. The Active members shall consist of such regular physicians as have complied, or shall comply with the laws of the State, ratified February 28, 1889, and shall receive the approval of the Committee on credentials and a two-thirds vote of the members present at the meeting at which their applications for membership are presented. They shall be required to sign the Constitution and By-Laws of the Society, pay an initiation fee of five dollars, and shall be liable for such dues for defraying the expenses of the Society as the Society may, from year to year, agree upon.

SEC. 3. The Honorary members shall consist of such regular physicians as have won distinction by their contributions to medical science; those elderly physicians who, prior to their retirement from practice, have displayed a proper interest in the

welfare of this Society, or who, by their example, have reflected credit and honor upon the profession. They must receive a two-thirds vote of the members present at the meeting at which their names are presented for election. They shall be exempt from all dues and fines and shall be entitled to all the privileges of the Society except the right to vote and hold office.

SEC. 4. The Honorary fellows shall consist of such physicians as have been members of this Society for thirty years, and whose dues have been paid during that time. They shall receive a two-thirds vote of the members present at the meeting at which their names are proposed for promotion. They shall be exempt from all dues and fines and shall be entitled to all the privileges enjoyed by active members in good standing.

ARTICLE IV.

OF THE OFFICERS.

SECTION 1. The officers of this Society shall be a President, Four Vice Presidents, a Corresponding and Recording Secretary and a Treasurer.

SEC. 2. They shall be elected by ballot, on the afternoon of the second day of the meeting, a plurality of votes cast being sufficient for election, and shall serve for one year, except the Secretary and the Treasurer, who may serve for three years, or until his successor is elected.

SEC. 3. Any nominee for the office of President shall have been an active member of the Society for five years, including the year of his election, shall have attended two of three meetings immediately preceding his nomination, including the meeting at which he is nominated; and shall be a member in good standing at the time of his nomination.

ARTICLE V.

DUTIES OF THE OFFICERS.

SECTION 1. The President shall preside at the meetings, preserve order and perform such other duties as pertain to his office. He shall not be eligible for a second term.

SEC. 2. The Vice Presidents, in the order of their rank, shall assist the President in the performance of his duties, and during his absence, or at his request, shall officiate in his place. They shall not be eligible to two terms in succession.

SEC. 3. The Corresponding and Recording Secretary shall conduct the correspondence of the Society, and shall be the custodian of all papers belonging to the Society, except such as appertain to the Treasurer. He shall keep correct minutes of the proceedings of the Society, and shall place them in the hands of the Publication Committee within thirty days after the adjournment of the Society. He shall advertise in two of the leading papers of the State a month in advance all meetings of the Society; and shall, at the same time, mail to each member a notice of the time and place of the meeting, and shall perform all such other duties as usually appertain to his office. He shall receive such compensation as the Society may, from year to year, agree upon.

SEC. 4. The Treasurer shall receive all monies belonging to the Society, and disburse them as directed, preserving vouchers for the same. He shall present annually a statement of the finances of the Society, which shall be referred to a committee of three members, who shall audit the same and report to the Society. He shall receive such compensation as the Society may, from year to year, agree upon.

ARTICLE VI.

OF THE BOARD OF MEDICAL EXAMINERS.

SECTION 1. The members of the Board of Medical Examiners shall be elected by ballot for a term of six years. A majority of the votes cast being necessary to a choice. The election shall be held at 10 o'clock a. m., on the second day of the annual meeting, and the balloting shall continue until the entire number of seven are elected.

NOTE.—In order to accomplish the change from the present method of electing a portion of the Board every two years to that of electing the whole number at one time without curtailing the term of office of those already elected, it is decreed that the two members to be elected in 1898 be elected for four (4) years and the two members to be elected in 1900, for two (2) years after which this note having served its purpose shall be considered as repealed without further action on the part of the Society.

SEC. 2. A vacancy occurring from any cause other than expiration of term of office, shall be filled by the Board or a quorum thereof.

ARTICLE VII.

OF COMMITTEES AND THEIR DUTIES.

SECTION 1. A committee of three members to be known as the *Committee on Credentials* shall be appointed by the President at the morning session of the first day of each meeting. Their duty shall be to investigate the character and standing of all applicants for membership in the Society, and receive the credentials of any delegates from other State or District Societies, reporting to the Society the names of such physicians as they think proper. They may ask for instructions from the Society in any doubtful case. The report shall be in order at any hour during the session.

SEC. 2. A *Committee on Finance*, to consist of three members, shall be appointed by the President at the morning session of the first day of each meeting. They shall examine the accounts of the Treasurer and report to the Society, making suggestions as to the amount of assessments for the coming year, the remuneration of the Secretary and the Treasurer and such other suggestions concerning the finances of the Society as they may think proper.

SEC. 3. A *Committee on Nominations*, to consist of five members, shall be appointed by the President at the morning session of the second day of each meeting. They shall nominate an *Orator*, an *Essayist*, a *Leader of Debate*, a *Committee on Publication*, an *Obituary Committee*, Delegates to the American Medical Association, the Virginia Medical Association, the South Carolina Medical Association, and such other associations as the Society may determine, all to serve one year; also a *Board of Censors*, to consist of three members and to serve three years.

SEC. 4. The *Board of Censors* shall investigate the professional status of any member of the Society which shall be called in question and presented to them by charges and specifications. Upon the presentation of such charges and specifications they shall organize a medical court, before which the case shall be tried: *Provided*, however, that such Board of Censors shall be

empowered to reconcile differences between members before going into a trial of the case. Should a case come to trial they shall make a report of their investigation to the Society, with such recommendation as they deem necessary and proper.

ARTICLE VIII.

OF THE SECTIONS AND VOLUNTARY COMMUNICATIONS.

SECTION 1. The newly installed President shall, at the last session of each meeting, appoint a member to serve as Chairman of each of the following sections, to-wit: Anatomy and Surgery, Therapeutics and Practice of Medicine, Physiology and Materia Medica, Obstetrics, Gynecology, Medical Jurisprudence and State Medicine, Pathology and Microscopy.

SEC. 2. At any time after the meeting the Chairman of each section may appoint three such members as he may select as his assistants to work up such items as he may designate, confining himself to the general advancement in his section.

SEC. 3. The Chairman of sections shall send into the Secretary, not later than thirty days previous to each meeting of the Society, the titles of papers to be presented by themselves and their assistants to be used by the Secretary in making a programme for the meeting.

SEC. 4. No paper shall be read before the Society unless the author be present, unless his absence be due to some unavoidable circumstances. A paper presented by proxy may be referred to the Committee on Publication.

SEC. 5. No paper shall be referred to the Committee on Publication until it has been placed in the hands of the Secretary; and the Secretary shall not return any paper accepted by the Society without the consent of the Society, and then he shall take a receipt for the same.

SEC. 6. No paper shall be received by or read before this Society that has been presented to any other Society, or that has been offered for publication in any journal; and in the case of any paper accepted the author is supposed to have invested with the Society all rights to its ownership.

SEC. 7. No paper shall be published in the Transactions of this Society unless approved by the Committee on Publication; and any paper rejected by said committee shall be returned to

the author through the Secretary of the Society.

SEC. 8. It is to be understood that the Society is not to be considered as endorsing all the views and opinions advanced by the authors of papers published in the Transactions of the Society.

ARTICLE IX.

OF THE FUNDS.

SEC. 1. Funds for defraying the expenses of the Society shall be raised by annual assessments on the active members.

SEC. 2. Each active member shall, after being duly elected and signing the Constitution, pay the sum of five dollars as an admission fee, and be subject to the annual assessment of the Society, except for the year of his admission.

SEC. 3. Should an active member fail to pay the annual assessment two years in succession, he shall be notified by the Treasurer of his delinquency, and if, after this notice, he does not pay his arrearage within sixty days, the Treasurer shall send his name to the Secretary and the member shall not be entitled to receive tne Transactions until all dues are paid.

SEC. 4. Should a member be in arrears for four years and fail to pay after due notice from the Treasurer, his name shall be dropped. *Provided*, he may be re-instated at any meeting after endorsement by the Committee on Credentials, and on the payment of five dollars; and so retain his place on the roll as formerly. But this payment shall not entitle the member to receive the volumes of the Transactions that he has forfeited.

ARTICLE X.

MEETINGS OF THE SOCIETY.

The Society shall hold its meetings annually. The time and place of meeting shall be determined for each succeeding year by a vote of the Society.

ARTICLE XI.

OF THE CODE OF ETHICS.

The Society adopts, as a part of its regulations, that part of the Code of Ethics of the American Medical Association which is published by its order.

ARTICLE XII.

PROVISIONS FOR AMENDMENTS.

Any proposition for amending this Constitution shall be presented in writing and shall lay over to be acted upon at the succeeding meeting of the Society. If it receives a majority of the votes cast it shall be adopted.

BY-LAWS.

OF THE ORDER OF BUSINESS.

1.—The President, or, in his absence, one of the Vice Presidents in the order of their rank, shall call the Society to order, or in the absence of all these officers a presiding officer shall be chosen by a majority of the members present.

2.—The appointment of a Committee on Credentials and the Committee on Finance.

3.—Report of Committee on Credentials.

4.—Roll call.

5.—Reading of the President's Message.

6.—Any business requiring early attention may, by permission, be introduced.

7.—Correspondence shall be read by the Secretary.

8.—Written communications upon medical subjects may be read and discussed. This shall include reports from sections as arranged each year by programme.

9.—Oral communications may be read and discussed.

10.—Election of officers.

11.—The selection of a place for the next annual meeting of the Society.

12.—Unfinished business.

13.—Adjournment.

CODE OF MEDICAL ETHICS.

OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS, AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

ARTICLE I.

DUTIES OF PHYSICIANS TO THEIR PATIENTS.

SECTION 1. A physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. These obligations are the more deep and enduring because there is no tribunal other than his own conscience to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick, with due impression of the importance of their office, reflecting that the ease, the health and the lives of those committed to their charge depend on their skill, attention and fidelity. They should study, also in their deportment, so to unite tenderness with firmness, and condecension with authority, as to inspire the minds of their patients with gratitude, respect and confidence.

SEC. 2. Every case committed to the charge of a physician should be treated with attention, steadiness and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed, and the familiar intercourse to which physicians are admitted in their professional visits, should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligations of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance should ever be divulged by the physician except when he is imperatively required to do so. The force and necessity of this obligation are indeed so great that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

SEC. 3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease—to meet promptly every change which may occur, and also to tend to preserve the confidence of the patient. But unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and render him liable to be suspected of interested motives.

SEC. 4. A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs, and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming when executed by him that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned in their last moments. The life of a sick person can be shortened, not only by the acts, but also by the words or the manner of a physician. It is, therefore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

SEC. 5. A physician ought not to abandon a patient because the case is thought incurable; for his attendance may continue to be highly useful to the patient, and comforting to the relatives around him, even in the last period of fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance upon such circumstances would be sacrificing to fanciful delicacy and mistaken liberality, that moral duty which is independent of, and far superior to, all pecuniary consideration.

SEC. 6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy and more enlarged views in practice.

SEC. 7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offense, if they be proffered with politeness, and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

ARTICLE II.

OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

SECTION 1. The members of the medical profession, upon whom is enjoined the performance of so many important and arduous duties toward the community, and who are required to make so many sacrifices of comfort, ease and health for the welfare of those who avail themselves of their services, certainly have a right to expect and require that their patients hould entertain a just sense of the duties which they owe to heir medical attendants.

SEC. 2. The first duty of a patient is to select as his medical adviser one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist; and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

SEC. 3. Patients should prefer a physician whose habits of life are regular, and who is not devoted to company, pleasure or any pursuit incompatible with his professional obligations. A patient should also confide the care of himself and family, as much as possible, to one physician; for a medical man who has become acquainted with the peculiarities of constitution, habits and predispositions of those he attends, is more likely to be successful in his treatment than one who does not possess that knowledge.

A patient who has thus selected his physician should always apply for advice in what may appear to him trival cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

SEC. 4. Patients should faithfully and unreservedly communicate to their physician the supposed cause of their disease. This is the more important, as many diseases of a mental origin simulate those depending on external causes and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser; he should always bear in mind that a medical man is under the strongest obligations of secrecy. Even the female sex should never allow feelings of shame or delicacy to prevent their disclosing the seat, spmptoms and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

SEC. 5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories than by the most minute account of his own framing. Neither should he obtrude upon his physician the details of his business nor the history of his family concerns.

SEC. 6. The obedience of a patient to the prescriptions of his physician should be prompt and explicit. He should never permit his own crude opinions as to their fitness to influence his attention to them. A failure in one particular may render an

otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink and exercise. As patients become convalescent, they are very apt to suppose that the rules prescribed for them may be disregarded, and the consequence, but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever that may be recommended to them by self-constituted doctors and doctresses who are so frequently met with, and who pretend to possess infallable remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all cases they are injurious by contravening the plan of treatment adopted by the physician.

SEC. 7. A patient should, if possible avoid even the friendly visits of a physician who is not attending him—and when he does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes of treatment may be attended with equal success when applied singly, yet conjointly they are very likely to be productive of disastrous results.

SEC. 8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

SEC. 9. Patients should always, when practicable, send for their physician in the morning, before his usual hour of going out; for by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical adviser unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

SEC. 10. A patient should after his recovery, entertain a just and endearing sense of the value of the services rendered by his physician; for these are of such a character that no mere pecuniary acknowledgment can repay or cancel them.

OF THE DUTIES OF PHYSICIANS TO EACH OTHER AND THE PROFESSION AT LARGE.

ARTICLE I.

DUTIES FOR THE SUPPORT OF PROFESSIONAL CHARACTER.

SECTION 1. Every individual, on entering the profession, as

he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exact its standing and to extend the bounds of its usefulness. He should, therefore, observe strictly such laws as are instituted for the government of its members; should avoid all contumelious and sarcastic remarks relative to the faculty as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labors, brought it to the elevated condition in which he finds it.

SEC. 2. It is not in accord with the interest of the public or the honor of the profession that any physician or medical teacher should examine or sign diplomas or certificates of proficiency for, or otherwise be specially concerned with, the graduation of persons whom they have good reason to believe intend to support and practice any exclusive and irregular system of medicine.

SEC. 3. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical, and to attain such eminence is a duty every physician owes alike to his profession and to his patients. It is due to the latter, as without it he can not command their respect and confidence, and to both because no scientific attainments can compensate for the want of correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice of physic requires the unremitting exercise of a clear and vigorous understanding; and, on emergencies, for which no professional man should be unprepared, a steady hand, an acute eye and an unclouded head may be essential to the well-being, and even to the life, of a fellow being.

SEC. 4. It is derogatory to the dignity of the profession to resort to public advertisements, or private cards, or hand-bills, inviting the attention of individuals affected with peculiar diseases—publicly offering advice and medicine to the poor gratis, or promising radical cures, or to publish cases and operations in the daily prints, or suffer such publications to be made, to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

SEC. 3. Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret nostrum, whether it be the composition or exclusive property of himself or of others. For, if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mistery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also

reprehensible for physicians to give certificates attesting the efficacy of patent medicines, or in any way to promote the use of them.

ARTICLE II.

PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

SECTION 1. All practitioners of medicine, their wives and their children, while under paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them whose assistance may be desired. A physician afflicted with disease is usually an incompetent judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one who, by the ties of consanguinity, is rendered peculiarly dear to him, tend to obscure his judgment and produce timidity and irresolution in his practice. Under such circumstances medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice on which confidence depends. But, if a distant member of the faculty, whose circumstances are affluent, request attendance, and a honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed, which the party receiving it would wish not to incur.

ARTICLE III.

OF THE DUTIES OF PHYSICIANS AS RESPECT VARIOUS OFFICES.

SECTION 1. The affairs of life, the pursuit of health, and the various accidents and contingences to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients, and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy which should always be performed with utmost consideration for the interest and character of the family physician and when exercised for a short period all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglect his business in quest of pleasure and amusement, he cannot be considered as entitled to the advantages of the frequent long-continued exercises of this fraternal courtesy, without awarding to the physician who officiates the fees arising from the discharge of his professional duties.

SEC. 2. In obstetrical and important surgical cases, which give rise to unusual fatigue, anxiety and responsibility, it is just that the fees accruing therefrom should be awarded to the physician who officiates.

ARTICLE IV.

OF THE DUTIES OF PHYSICIANS AS REGARD TO CONSULTATIONS.

SECTION 1. A regular medical education furnishes the only presumptive evidence of professional abilities and requirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent regular practitioner, who has a license to practice from some medical board of known acknowledged responsibility, recognized by this Association, and who is in good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and the aids actually furnished by anatomy, physiology, pathology and organic chemistry.

SEC. 2. In consultations no rivalship or jelousy should be indulged; candor, probity and all due respect should be exercised toward the physician having charge of the case.

SEC. 3. In consultations the attending physician should be the first to propose the necessary questions to the sick, after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation; and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express. But no statement or discussion of it should take place before the patient or his friends, except in the presence of the faculty attending, and by their common consent; and no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence.

SEC. 4. In consultations the physician in attendance should deliver his opinion first, and when there are several consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. But such variations, and the reasons for it, ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency when the regular attendant is out of the way, and similar explanations must be made by him at the next consultation.

SEC. 5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations together, aud this is greatly practicable, for society has been considerate enough to allow the plea of a profeesional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present, he will, of course, see the patient and prescribe; but if it be the consulting one, he should retire except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patient, and give his opinion in writing, and under seal, to be delivered to his assocciate.

SEC. 6. In consultations theoretical discussions should be avoided as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

SEC. 7. All discussions in consultaton should be held as secret and confidential. Neither by words or manner should any of the parties to a consultation assert or insinuate that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants —they must equally share the credit of success as well as the blame of failure.

SEC. 8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the number be equal on each side then the decision should rest with the attending physician. It may, moreover, sometimes happen that two physicians cannot agree in their views of the nature of a case, and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concession, as far as they can be justified by a conscientious regard for the dictates of judgment. But in the event of its occurrence a third physician should, if practicable, be called to act as umpire; and, if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide. But, as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

SEC. 9. As circumstances sometimes occur to render a special consultation desirable, when the continued attendance of two physicians might be objectionable to the patient, the member

of the faculty whose assistance is required in such cases should sedulously guard against all future unsolicited attendance. As such consultations require an extraordinary portion of both time and attention, at least a double honorarium may be reasonably expected.

SEC. 10. A physician who is called upon to consult should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified, as far as can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in him, or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

ARTICLE V.

DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

SECTION 1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice.

SEC. 2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made; no disingenuous hints given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

SEC. 3. The same circumspection and reserve should be observed when, from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made no particular inquiries should be instituted relative to the nature of this disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4. A physician ought not to take charge of or prescribe for a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or been regularly notified that his services are no longer desired. Under such circumstances, no unjust and illiberal insinuation should be thrown out in relation to the conduct or practice previously pursued, which should be justiffed as far as

candor and regard for truth and probity will permit; for it often happens that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are unusually protracted, the want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

SEC. 5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

SEC. 6. It often happens in case of sudden illness, or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances, courtesy should assign the patient to the first who arrives, who should select from those present any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates should request the family physician, if there be one, to be called, and, unless his further attendance be requested, should resign the case to the latter on his arrival.

SEC. 7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on his return or recovery of the regular attendant, and with the consent of the patient, to surrender the case.

[The expression, "patient of another practitioner," is understood to mean a patient who may have been under the charge of another practitioner at the time of the attack of sickness, or departure from home of the latter, or who may have called for his attendance during his absence or sickness, or in any other manner given it to be understood that he regarded the said physician as his regular medical attendant.]

SEC. 8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no further than is absolutely necessary with the general plan of treatment; to assume no future direction unless it be expressly desired; and, in the last case, to request an immediate consultation with the practitioner previously employed.

SEC. 9. A wealthy physician should not give advice gratis to the affluent; because his doing so is an injury to his professional brethren. The office of a physician can never be supported as an exclusive beneficent one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with which might justly be claimed.

SEC. 10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

ARTICLE VI.

OF DIFFERENCES BETWEEN PHYSICIANS.

SECTION 1. Diversity of opinion and opposition of interest may, in the medical, as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a court-medical.

SEC. 2. As a peculiar reserve must be maintained by physicians towards the public, in regard to professional matters, and as there exist numerous points in medical ethics and etiquette through which the feelings of medical men may be painfully assailed in their intercourse with each other, and which cannot be understood or appreciated by general society, neither the subject-matter of such differences nor the adjudication of the arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the faculty.

ARTICLE VII.

OF PECUNIARY ACKNOWLEDGMENTS.

SECTION 1. Some general rules should be adopted by the faculty, in every town or district, relative to pecuniary acknowledgments from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

OF THE DUTIES OF THE PROFESSION TO THE PUBLIC. AND OF THE OBLIGATIONS OF THE PUBLIC, TO THE PROFESSION.

ARTICLE I.

DUTIES OF THE PROFESSION TO THE PUBLIC.

SECTION. 1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygien and legal medicine. It is their province to enlighten the public in regard to quarantine regulations; the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions in relation to the medical police of towns, as drainage, ventilation, etc.; and in regard to measures for the prevention of epidemic and con-

tagious diseases; and when pestilence prevails it is their duty to face the danger and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

SEC. 2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroners' inquests and courts of justice on subjects strictly medical—such as involve questions relating to sanity, legitimacy, murder by poisons or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a post mortem examination, it is just, in consequence of the time, labor and skill required and the responsibility and risk they incur, that the public should award them a proper honorarium.

SEC. 3. There is no profession by the members of which elemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to the performance of such good offices. Poverty, professional brotherhood and certain of the public duties referred to in the first section of this article, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform military duty, or to testify to the state of health of persons wishing to insure their lives, to obtain pensions, or the like, without a pecuniary acknowledgment. But to individuals in indigent circumstances such professional services should always be cheerfully and freely accorded.

SEC. 4. It is the duty of physicians who are frequent witnesses of the enormities committed by quackery and the injury to health, and even destruction of life caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and imposters. Physicians ought to use all the influence which they may possess, as professors in colleges of pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage druggists and apothecaries from vending quack or secret medicines, or from being in any way engaged in their manufacture and sale.

ARTICLE II.

OBLIGATIONS OF THE PUBLIC TO THE PHYSICIANS.

SECTION 1. The benefits accruing to the public, directly and indirectly, from the active and unwearied beneficence of the

profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumptions of ignorance and empiricism; to afford every encouragement and facility for the acquisition of medical education—and no longer to allow the statute-books to exhibit the anomaly of exacting knowledge from physicians, under a liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

List of Members.

IN THE ORDER IN WHICH THEY SIGNED THE CONSTITUTION.

(The effort has been made to obtain the correct address of each member of the Society. Any person noting an error or omission in the roster will please inform the secretary of the Society, at Wilmington, giving the proper correction.)

DATE OF SIGNING.			
1849	Dr.	J. B, Dunn	Raleigh.
1851	"	Robt. Gibbon	Charlotte.
1852	"	Allman Holmes	Clinton.
1855	"	Peter E. Hines	Raleigh.
1857	"	R. H. Winborne	Barnitz.
1858	"	Geo. A. Foote	Warrenton.
1859	"	Eugene Grissom	Pueblo, Colorado.
1860	"	W. J. Jones	Goldsboro.
1860	"	Chas. J. O'Hagan	Greenville.
1860	"	J. W. Jones	Tarboro.
1860	"	J. K. Ruffin	Wilson.
1867	"	Wm. R. Wood	Scotland Neck.
1867	"	P. A. Barrier	Mt. Pleasant.
1867	"	Geo. L. Kirby	Raleigh.
1867	"	J. F. Shaffner	Salem.
1868	"	W. T. Cheatham	Henderson.
1868	"	F. J. Haywood	Raleigh.
1868	"	B. P. Alston	Henderson.
1869	"	H. T. Bahnson	Salem.
1870	"	W. W. Lane	Wilmington.
1870	"	Chas. Duffy	Newbern.
1870	"	Wm. J. Love	Wilmington.
1870	"	Jas. McKee	Raleigh.
1870	"	Willis Alston	Littleton.
1870	"	W. J. H. Bellamy	Wilmington.
1871	"	W. I. Royster	Raleigh.
1871	"	Geo. Gillett Thomas	Wilmington.
1872	"	Francis Duffy	Newbern.
1873	"	A. G. Carr	Durham.
1873	"	J. F. Miller	Goldsboro.
1873	"	J. M. Hadley	LaGrange.
1873	"	J. W. Vick	Selma.
1873	"	P. L. Murphy	Morganton.
1874	"	Jos. Graham	Charlotte.
1874	"	W. H. Lilly	Concord.
1874	"	J. H. McMullen	Edenton.
1874	"	T. D. Haigh	Fayetteville.
1875	"	L. J. Picot	Littleton.
1875	"	D. W. Bulluck	Wilmington.
1875	"	W. H. Whitehead	Rocky Mount.
1875	"	R. H. Speight	Wrendale.
1876	"	W. C. McDuffie	Fayetteville.
1876	"	Henry Tull	Kinston.

1876	Dr.	J. W. McNeill	Fayetteville.
1876	"	J. D. McMillan	Lumberton.
1877	"	Geo. W. Long	Graham.
1877	"	Geo. W. Graham	Charlotte.
1877	"	N. S. Sievers	Salem.
1877	"	Richard H. Lewis	Raleigh.
1877	"	J. F. Harrell	Whiteville.
1877	"	L. H. Hill	Germanton.
1878	"	R. J. Noble	Selma.
1878	"	W. H. H. Cobb	Goldsboro.
1878	"	J. H. Tucker	Henderson.
1878	"	E. H. Hornaday	Willow Green.
1879	"	I. W. Faison	Charlotte.
1879	"	I. G. Ector	Friendship.
1879	"	J. M. Covington	Rockingham.
1879	"	W. P. Beall	Greensboro.
1879	"	A. D. McDonald	Wilmington.
1879	"	S. B. Jones	Charlotte.
1879	"	J. J. Cox	High Point.
1879	"	D. M. Prince	Laurinburg.
1879	"	J. A. Sexton	Raleigh.
1879	"	John C. Walton	Reidsville
1879	"	R. A. Hargrave	Robesonville.
1879	"	Julian M. Baker	Tarboro.
1879	"	Thos. E. Anderson	Statesville.
1880	"	J. M. Stansill	Rockingham.
1880	"	Thomas Hill	Goldsboro.
1880	"	E. de la R. King	Beaufort.
1880	"	J. C. Shepard	Wilmington.
1880	"	W. C. Galloway	Wilmington.
1880	"	T. S. Burbank	Wilmington.
1880	"	R. W. Thomas	Thomasville.
1880	"	C. M. Poole	Craven.
1880	"	J. L. Nicholson	Richlands,
1880	"	A. W. Knox	Raleigh.
1880	"	John Whitehead	Salisbury.
1880	"	S. J. Montague	Winston.
1880	"	W. P. Mercer	Elm City.
1880	"	L. W. Hunter	Sardis.
1881	"	R. F. Whiteside	Hickory.
1881	"	J. A. Reagan	Weaverville.
1881	"	G. W. Fletcher	Fletchers.
1881	"	M. H. Fletcher	Asheville.
1881	"	T. M. Jordan	Hookerton.
1881	"	R L. Payne	Norfolk, Va.
1881	"	T. S. Meisenheimer	Morven.
1881	"	T. F. Pharr	Concord.
1881	"	H. B. Weaver	Asheville.
1881	"	A. J. Battle	Wadesboro.
1881	"	J, H. Williams	Asheville.
1882	"	J. R. Irwin	Charlotte.
1882	"	A. R. Wilson	Greensboro.
1882	"	K. P. Battle	Raleigh.
1882	"	R. S. Young	Concord.
1882	"	R. A. Smith	Goldsboro.
1882	"	C. A. Meisenheimer	Charlotte.
1883	"	W. W. Faison	Goldsboro.
1883	"	W. O. McDowell	Scotland Neck.
1883	"	N. H. Street	Newbern.
1883	"	J. A. Stevens	Clinton.

1883	Dr.	T. S. Royster	Townesville.
1883	"	I. M. Taylor	Morganton.
1883	"	J. M. Hodges	LaGrange.
1883	"	W. L. Hudson	Dunn.
1883	"	F. R. Harriss	Henderson.
1883	"	G. C. Edwards	Hookerton.
1883	"	E. M. Summerell	Mill Bridge.
1883	"	N. M. McLean	Gibson's Station.
1883	"	B. L. Long	Hamilton.
1883	"	N. P. Boddie	Durham.
1884	"	W. G. Freeman	Murfresboro.
1884	"	W. C. Whitfield	Quinerly.
1884	"	J. A. Burroughs	Asheville.
1884	"	F. W. Brown	Greenville.
1884	"	J. W. Long	High Point.
1884	"	M. P. Perry	Macon.
1884	"	G. J. Robinson	Smithfield.
1884	"	M. R. Adams	Statesville.
1884	"	G. T. Sikes	Grissom.
1884	"	W. B. Pritchard	355 W. 58th St. N.Y.
1884	"	M. H. Futrell	Conway.
1884	"	B. F. McMillan	Plainview.
1884	"	J. E. Grimsley	Snow Hill.
1884	"	A. M. Herron	Charlotte.
1885	"	L. M. Archey	Concord.
1885	"	W. E. Powell	Gastonia.
1885	"	F. W. Hughes	Newbern.
1885	"	E. W. Pugh	Windsor.
1885	"	S. D. Booth	Oxford.
1885	"	J. A. Hodges	Richmond, Va.
1885	"	Annie L. Alexander	Charlotte.
1885	"	J. T. Nicholson	Bath.
1885	"	A. T. Cotton	Morrisville.
1885	"	A. D. York	Morrisville.
1885	"	S. L. Montgomery	Concord.
1885	"	K. Leggett	Hobgood.
1885	"	W. W. Pharr	Newell's.
1885	"	J. M. Faison	Faison.
1885	"	J. W. McGee	Raleigh.
1885	"	H. W. Dorsett	Bethany.
1885	"	D. G. Caldwell	Concord.
1885	"	J. M. O'Kelly	Williams Mills.
1885	"	M. F. Fox	Greensboro.
1885	"	D. T. Tayloe	Washington.
1885	"	Zeno Brown	Greenville.
1885	"	F. W. Ritter	Moyock.
1885	"	Mayland Bolton	Rich Square.
1885	"	W. E. Turlington	Benson.
1886	"	G. H. Dodd	Clayton.
1886	"	B. S. Utley	Holly Springs.
1886	"	R. A. Whitaker	Trenton.
1886	"	M. W. Harper	Dunn.
1886	"	H. H. Harriss	Wake Forest.
1886	"	S. C. McClure	
1886	"	M. E. Robinson	Goldsboro.
1887	"	O. D. King	Albemarle.
1887	"	W. D. Pemberton	Monroe.
1887	"	A. W. Goodwin	Raleigh.
1887	"	W, H. Bagwell	Greenville.
1887	"	H. W. Lewis	Jackson.

1887	"	Henry H. Dodson	Milton.
1887	Dr.	S. W. Battle, U.S.N	Asheville.
1887	"	J. F. Beall	Linwood.
1887	"	W. L. Crouse	Lincolnton.
1887	"	Joe Hill	Lexington.
1887	"	J. H. Way	Waynesville.
1887	"	R. H. Stancell	Margarettesville.
1887	"	R. A. Patterson	Aurelian Springs.
1887	"	J. McDeArmond	Mint Hill.
1887	"	R. J. Brevard	Charlotte.
1887	"	R. C. Register	Charlotte.
1887	"	R. W. Tate	Greensboro.
1887	"	J. D. Croom	Maxton.
1887	"	D. C. Parris	Hillsboro.
1888	"	J. C. Grady	Mt. Olive.
1888	"	J. A. Faison	Raleigh.
1888	"	A. McDougald	Hope Mills.
1888	"	W. J. Lumsden	Elizabeth City.
1888	"	G. H. Moran	Morganton.
1888	"	N. B. Herring	Wilson.
1888	"	Jas. W. McGee, Jr	Raleigh.
1888	"	Arch. McKinnon	Lumber Bridge.
1888	"	Duncan Smith	Athens.
1888	"	S. A. Henly	Asheboro.
1888	"	W. A. Monroe	Sanford.
1888	"	C. E. Woodley	Kinston.
1888	"	W. S. Anderson	Wilson.
1888	"	J. G. Broadnax	Greensboro.
1888	"	Duncan Sinclair	Rowland.
1888	"	J. B. Ashcroft	Monroe.
1888	"	C. H. Lewis	Farmers.
1888	"	E. B. Goelet	Saluda.
1888	"	B. T. Cox	Redalia.
1888	"	A. Cheatham	Durham.
1888	"	Jenness Morrill	Farmville.
1889	"	J. T. J. Battle	Wadesboro.
1889	"	W. V. McCauless	Danbury.
1889	"	Oscar McMullan	Elizabeth City.
1889	"	Albert Anderson	Wilson.
1889	"	W. B. Fearing	Poplar Branch.
1890	"	W. G. Stafford	Burlington.
1890	"	J. S. Lafferty	Concord.
1890	"	T. L. Booth	Oxford.
1890	"	J. H. Marsh	Fayetteville.
1890	"	P. B. Loftin	Bell's Ferry.
1890	"	R. L. Gibbon	Charlotte.
1890	"	W. A. Graham	Charlotte.
1890	"	J. L. Ray	Burnsville.
1890	"	W. H. Harrell	Williamston.
1890	"	J. L. Egerton	Hendersonville.
1890	"	J. W. White	Wilkesboro.
1890	"	E. G. Moore	Elm City.
1890	"	J. P. Fearrington	Winston.
1890	"	E. R. Michaux	Greensboro.
1890	"	E. P. Snipes	Jonesboro.
1890	"	E. C. Laird	Haw River.
1890	"	J. P. Munroe	Davidson.
1890	"	R. A. Martin	Roxboro.
1890	"	R. D. Jewett	Wilmington.

1891	Dr	J. B. H. Knight	Williamston.
1891	"	J. G. Waldrop	Hendersonville.
1891	"	C. Few	Hendersonville.
1891	"	W. F. Chenault	Elmwood.
1891	"	C. G. Nichols	Roxboro.
1891	"	Richard H. Whitehead	Chapel Hill.
1891	"	Jos. L. Laxton	Morganton.
1891	"	Karl von Ruck	Asheville.
1891	"	D. A. Stanton	High Point.
1891	"	Jas. A. Turner	High Point.
1891	"	H. Longstreet Taylor	S. Paul, Minn.
1891	"	J. F. Sanderford	Creedmore.
1891	"	D. I. Watson	Southport.
1891	"	C. Daligny	Thomasville.
1891	"	W. E. Headen	Morehead City.
1891	"	W. J. Kloutz	Alexander.
1891	"	A. J. Monroe	Jonesboro.
1891	"	J. Y. Fitzgerald	Monroe.
1891	"	J. A. Watson	Asheville.
1891	"	W. H. Wilson	Gastonia.
1891	"	H. K. Edgerton	Selma.
1891	"	J. T. Reid	Old Fort.
1891	"	J. C. Black	Pioneer Mills.
1891	"	R. W. Palmer	Gulf.
1891	"	W. P. Ivey	Lenoir.
1892	"	J. Alston Nicholson	Washington.
1892	"	E. L. Cox	Jacksonville.
1892	"	W. J. Harrell	Aulander.
1892	"	P. R. Hatch	Youngsville.
1892	"	R. W. Mills	Troutmans.
1892	"	Russell Bellamy	152 W. 57th St., N. Y.
1892	"	A. G. Jones	Walnut Cove.
1892	"	Wade H. Atkinson	Washington, D. C.
1892	"	G. V. Cate	Taylor's Bridge.
1892	"	Silas P. Wright	Wilmington.
1892	"	K. A. Blue	Laurinburg.
1892	"	H. Johnson	Grifton.
1892	"	A. J. Patterson	Liberty.
1892	"	F. P. Gates	Bayboro.
1892	"	W. R. Mayo	Jamesville.
1892	"	W. E. Fitch	Charleston, S. C.
1892	"	C. B. Ingram	Mt. Gilead.
1892	"	T. S. McMullan	Hertford.
1892	"	J. B. Shamberger	Star.
1892	"	Wm. D. McMillan	Wilmington.
1892	"	E. G. Goodman	El Paso.
1893	"	T. B. Williams	Ridgeway.
1893	"	G. M. Bell	Wakefield.
1893	"	W. B. Bullock	Franklinton.
1893	"	J. A. Matthews	Castalia.
1893	"	F. H. Seawell	Archer Lodge.
1893	"	R. J. Nelson	Robersonville.
1893	"	M. W. Gibson	Taylorsville.
1893	"	Albert Houck	Lenoir.
1893	"	S. Hassell	Plymouth.
1893	"	W. R. Galey	Graham.
1893	"	J. M. Flippin	Salisbury.
1893	"	C. A. Julian	Thomasville.
1893	"	Jas. T. Rieves	Julian.
1893	"	B. B. Williams	Keyser.
1893	"	W. H. Wakefield	Charlotte.

1893	"	R. J. Grimes	Bethel.
1893	"	E. F. Strickland	Bethania.
1893	"	H. C. Williams	Aberdeen.
1893	"	R. A. Moore	Moncure.
1893	"	R. L. Davis	Bryson City.
1893	"	W. H. Nicholson	Louisburg.
1893	"	Robt. J. Gill	Henderson.
1893	"	J. G. Blount	Washington.
1893	"	G. A. Renn	Raleigh.
1893	"	W. K. Hollingsworth	Mt. Airy.
1893	"	J. H. Gibbon	Philadelphia, Pa.
1893	"	M. L. Stevens	Enochville.
1893	"	C. N. Roberson	Ascend.
1893	"	Josh. Tayloe	Washington.
1894	"	W. T. Richardson	Greensboro.
1894	"	J. R. Gordon	Jamestown.
1894	"	C. O'H. Laughinghouse	Greenville.
1894	"	J. R. Hester	Prospect Hill.
1894	"	W. W. McKenzie	Salisbury.
1894	"	W. S. Taylor	Mt. Airy.
1894	"	R. E. Cox	Fremont.
1894	"	J. H. Mease	Canton.
1894	"	Thos. M. Riddick	Woodville.
1894	"	J. D. Jenkins	Crisp.
1894	"	C. L. Jenkins	Conetoe.
1894	"	C. S. Gilmer	Greensboro.
1894	"	C. H. Lewis	Reidsville.
1894	"	L. D. Wharton	Smithfield.
1894	"	B. F. Hallsey	Roper.
1894	"	O. B. Stroud	Ore Hill.
1894	"	C. T. Harper	Baltimore, Md.
1894	"	J. D. Edwards	Siler City.
1894	"	W. C. Steele	Mt. Olive.
1894	"	C. E. Walker	Huntersville.
1894	"	W. J. Vestal	Tyro Shops.
1894	"	Jno. E. Logan	Greensboro.
1894	"	W. J. Jones, Jr	Goldsboro.
1894	"	W. C. McCauless	Danbury.
1894	"	A. A. Kent	Lenoir.
1894	"	A. E. Ledbetter	Greensboro.
1894	"	D. A. Roberson	Guilford College.
1894	"	A. H. Harris	Wilmington.
1894	"	W. O. Spencer	Yanceyville.
1894	"	J. A. Meyers	Lexington.
1894	"	L. L. Johnson	Angeline.
1894	"	D. R. Schenck	Greensboro.
1894	"	J. M. Williams	Greensboro.
1894	"	A. J. Crowell	China Grove.
1894	"	T. P. Boaz	Stoneville.
1894	"	G. M. Ivie	Stoneville.
1894	"	G. R. Hughes	Pollocksville.
1894	"	D. J. Hill	Lexington.
1894	"	W. C. Ashworth	Kernersville.
1894	"	G. A. Smith	Siler City.
1895	"	E. H. Sugg	Snow Hill.
1895	"	F. H. Russell	Wilmington.
1895	"	W. E. Murphy	Carr.
1895	"	W. D. Bowen	Bath.
1895	"	Geo. H. West	Newton.
1895	"	W. L. Kirkpatrick	Crab Tree.
1895	"	W. T. Turlington	Fremont.

1895	"	J. S. Brown	Salisbury.
1895	"	R. S. McGeachy	Raleigh.
1895	"	C. E. Moore	Wilson.
1895	"	F. W. Whitehead	Scotland Neck.
1895	"	H. A. Royster	Raleigh.
1895	"	Jno. W. Saine	Lincolnton.
1895	"	J. C. Montgomery	Charlotte.
1895	"	W. O. Baskerville	Oxford.
1895	"	Joseph Dixon	Ayden
1895	"	B. W. West	Eureka.
1895	"	Jno. Thames	Lexington.
1895	"	J. T. Strickland	Nashville.
1895	"	J. C. Rodman	Washington.
1895	"	Claude M Jones	Grimesland.
1895	"	F. H. Arthur	Harrell's Store.
1896	"	Ab. Alexander	Columbia.
1896	"	Geo. Doughton	North Wilkesboro.
1896	"	C. C. Jackson	Plymouth.
1896	"	W. C. Brownson	W. Asheville.
1896	"	J. M. Turner	Wilkesboro.
1896	"	Fred. L. Potts	Vanceboro.
1896	"	Chas. W. Mosby	Kapps Mill.
1896	"	W. T. Holt	Donnahu.
1896	"	A. Y. Linville	Salem.
1896	"	Goode Cheatham	Henderson.
1896	"	James M. Parrott	Kinston.
1896	"	Jos. W. Kornegay	Mt. Olive.
1896	"	F. M. Holmes	Clinton.
1896	"	E. Fulp	Fulp.
1896	"	J. E. McLauchlin	Cool Spring.
1896	"	John Bynum	Winston.
1896	"	Chas. B. McAnally	Madison.
1896	"	G. W. Pressly	Charlotte.
1896	"	W. K. Reid	Pineville.
1896	"	W. H. Crowell	Poortith.
1896	"	Carl V. Reynolds	Asheville.
1896	"	W. G. Sutton	Winston.
1896	"	F. E. Asbury	Asbury.
1896	"	T. S. Faucette	Burlington.
1896	"	E. E. Klutz	Troutman.
1896	"	Anna M. Gove	Greensboro.
1896	"	Thos. B. Ashly	Mt. Airy.
1896	"	B. E. Reeves	Lamar.
1896	"	J. R. Reitzel	Woodleaf.
1896	"	Chas. L. Summers	Winston.
1896	"	J. B. Smith	Pilot Mountain.
1896	"	J. W. Rodwell	Cana.
1897	"	F. M. Clarke	Beaufort.
1897	"	H. S. Baird	Asheville.
1897	"	R. S. Primrose	Newbern.
1897	"	Clara E. Jones	Goldsboro.
1897	"	G. A. Coggeshall	Oxford.
1897	"	Chas. J. Sawyer	Belcross.
1897	"	E. A. Moye	Greenville.
1897	"	B. K. Hays	Oxford.
1897	"	J. W. Duguid	Dover.
1897	"	J. H. Pool	South Mills.
1897	"	Thos. F. Costner	Lincolton.

HONORARY MEMBERS.

Dr. Hunter McGuire, Richmond, Va.
*Dr. L. McL. Tiffany, Baltimore, Md.
Prof. L. A. Sayer, M.D., New York.
Dr. Thos. J. Moore, Richmond, Va.
Dr. W. T. Howard, Baltimore, Md.
Dr. W. W. Keen, Philadelphia, Pa.

HONORARY FELLOWS.

DATE OF SIGNING CONSTITUTION.		AT SESSION OF
1886	Dr. E. M. Littlejohn, Thomasville	1890
1887	Dr. J. M. Lawing, Lincolnton	1891
1855	Dr. J. G. Ramsay, Salisbury	1883

CORRECTION.

On page 18 of the minutes leave out the paragraph following the sentence "The President then read his message" and instead read as follows: "Dr. H. B. Weaver, of Asheville, moved that a committee be appointed to take action upon the suggestions contained in the address of the President as there was so much of importance in it to demand attention. It is like an egg, so full of meat that it requires full consideration." Dr. O'Hagan in seconding the motion said, "It has been my fortune to hear nearly every presidential address for 40 years. In my judgment there has not been a single one to equal or compare with it. It is full of sound practical wisdom, and its suggestions appeal strongly to the best interests of this society. I second Dr. Weaver's motion and move that 500 extra copies be printed and distributed among the laity, profession and outside, and am satisfied it will do them great good." Carried.

	Wadesboro	1889
*Battle, K. P. Jr	Raleigh	1882
Battle, S. W	Asheville	1887
Beall, J. F	Linwood	1887
Beall, W. P	Greensboro	1877
Bellamy, Russell	152 W. 57 St., N. Y	1892
Bellamy, W. J. H	Wilmington	1870
Bell, J. M	Wakefield	1893
*Best, B. W	Eureka	1895
Black, J. C	Pioneer Mills	1891
*Blount, J. G	Washington	1893
Blue, K. A	Laurinburg	1892
Boaz, Thos. A	Stoneville	1894
Bobbitt, W. H	Marion, Ind	1883

HONORARY MEMBERS.

Dr. Hunter McGuire, Richmond, Va.
*Dr. L. McL. Tiffany, Baltimore, Md.
Prof. L. A. Sayer, M.D., New York.
Dr. Thos. J. Moore, Richmond, Va.
Dr. W. T. Howard, Baltimore, Md.
Dr. W. W. Keen, Philadelphia, Pa.

LIST OF MEMBERS ALPHABETICALLY ARRANGED.

[An asterisk (*) denotes attendance at the last meeting.]

Adams, M. R.	Statesville	1884
Alexander, Ab.	Columbia	1896
Alexander, Annie L.	Charlotte	1885
Alston, P. B.	Henderson	1868
*Alston, Willis.	Littleton	1870
*Anderson. Albert.	Wilson	1889
*Anderson, T. E.	Statesville	1879
Anderson, W. S.	Wilson	1888
Archey, L. M.	Concord	1885
Arthur, F. H.	Harrell's Store	1895
Asbury, F. E.	Asbury	1896
Ashby, Thos. B.	Mt. Airy	1896
Ashcraft, J. E.	Monroe	1888
Ashworth, W. C.	Kernersville	1894
Atkinson, W. H.	707 12th St, N.W. Washington, D.C.	1892
*Bagwell, W. H.	Greenville	1887
*Bahnson, H. T.	Salem	1869
*Baird, H. S.	Asheville	1897
*Baker, Julian M.	Tarboro	1879
Barrier, P. A.	Mt. Pleasant	1867
Baskerville, W. O.	Oxford	1895
Battle, A. J.	Wadesboro	1881
Battle, J. T. J.	Wadesboro	1889
*Battle, K. P. Jr.	Raleigh	1882
Battle, S. W.	Asheville	1887
Beall, J. F.	Linwood	1887
Beall, W. P.	Greensboro	1877
Bellamy, Russell	152 W. 57 St., N. Y.	1892
Bellamy, W. J. H.	Wilmington	1870
Bell, J. M.	Wakefield	1893
*Best, B. W.	Eureka	1895
Black, J. C.	Pioneer Mills	1891
*Blount, J. G.	Washington	1893
Blue, K. A.	Laurinburg	1892
Boaz, Thos. A.	Stoneville	1894
Bobbitt, W. H.	Marion, Ind.	1883

Boddie, N. P.	Durham	1883
*Bolton, Mayland	Rich Square	1885
Booth, S. D	Oxford	1885
Booth, J. W.	Stem	1890
*Booth. T. L.	Oxford	1890
*Bowen, W. D.	Bath	1895
Brevard, R. J.	Charlotte	1887
Broadnax, J. G.	Greensboro	1888
Brown, F. W.	Greenville	1884
Brown, J. S.	Salisbury	1895
Brown, Zeno.	Greenville	1885
Brownson, W. C.	W. Asheville	1896
Bullock, W. B.	Scranton, Pa	1893
Bulluck, D. W.	Wilmington	1875
*Burbank, T. S.	Wilmington	1880
*Burroughs, J. A.	Asheville	1884
Bynum, Jno.	Winston	1896
Caldwell, D. G.	Concord	1885
Carr, A. G.	Durham	1873
Cheatham, A.	Durham	1888
Cheatham, Goode	Henderson	1896
Cheatham, W. T.	Henderson	1868
Chenault, W. F.	Elmwood	1891
*Clarke, F. M.	Beaufort	1897
Cobb, W. H. Jr.	Goldsboro	1890
*Cobb, W. H. H.	Goldsboro	1878
*Coggeshall, G. A.	Oxford	1897
*Costner, Thos. F.	Lincolnton	1897
*Cotten, A. T.	Morrisville	1885
Covington, J. M.	Rockingham	1879
*Cox, B. T.	Redalia	1888
Cox, E. L.	Jacksonville	1892
Cox, J. J.	High Point	1879
Cox, R. E.	Fremont	1894
Croom, J. D.	Maxton	1887
Crouse, W. L.	Lincolnton	1887
*Crowell, A. J.	China Grove	1894
Crowell, W. H.	Poortith	1896
Daligny, C.	Thompsonville	1891
Dalton, D. N.	Winston	1896
Davis, R. L.	Bryson City	1893
DeArmond, J. Mc.	Mint Hill	1887
*Dixon, Joseph	Ayden	1895
Dodd, G. H.	Clayton	1887

*Dodson, H. H.	Milton	1886
Dorsett, H. W.	Bethany	1885
Doughton, Geo.	No. Wilkesboro	1896
Duffy, Charles	Newbern	1870
*Duffy, Francis	Newbern	1872
*Duguid, J. W.	Dover	1897
Ector, I. G.	Friendship	1879
*Edwards, G. C.	Hookerton	1883
Edwards, J. D.	Siler City	1894
Egerton, J. M.	Hendersonville	1890
Faison, I. W.	Charlotte	1878
Faison, J. A.	Raleigh	1888
Faison, J. M.	Faison	1885
Faison, W. W.	Goldsboro	1883
Faucette, T. S.	Burlington	1896
Fearrington, J. P.	Winston	1890
Fearing, W. B.	Poplar Branch	1889
Few, C.	Hendersonville	1891
Fitch, W. E.	Charleston, S. C.	1892
Fitzgerald, J. Y.	Monroe	1891
Fletcher, G. W.	Fletchers	1881
*Fletcher, M. H.	Asheville	1881
*Flippin, J. M.	Salisbury	1893
Foote, G. A.	Warrenton	1858
Fox, M. F.	Gilmer's Store	1885
Freeman, W. G.	Mufreesboro	1884
*Fulp, E.	Fulp	1896
Futrell, M. H.	Conway	1884
*Galloway, W. C.	Wilmington	1880
Gates, F. P.	Manteo	1892
Gibbon, John H.	Philadelphia	1893
Gibbon, Robert.	Charlotte	1851
Gibbon, R. L.	Charlotte	1890
Gibson, M. W.	Taylorsville	1893
Gill, Robert J.	Henderson	1883
Gilmer, C. S.	Greensboro	1894
Goelet, E. B.	Saluda	1888
Goley, W. R.	Graham	1893
*Goodman, E. G.	El Paso	1892
Goodwin, A. W.	Raleigh	1887
Gordon, J. R.	Jamestown	1894
Gove, Anna M.	Greensboro	1896
Grady, J. C.	Magnolia	1888
Graham, Geo. W.	Charlotte	1877
Graham, Joseph.	Charlotte	1874

Graham, W. A	Charlotte	1890
Gray, R. F	Winston	1896
*Grimes, R. J	Bethel	1893
Grimsley, J. E	Snow Hill	1884
Grissom, Eugene	Pueblo, Col	1859
*Hadley, J. M	LaGrange	1873
*Haigh, T. D	Fayetteville	1874
Hallsey, B. F	Roper	1894
Hargrave, R. H	Robersonville	1879
Harper, C. T	239 N. Fulton Av., Baltimore	1894
Harper, M. W	Dunn	1886
Harrell, J. F	Whiteville	1877
*Harrell, W. H	Williamston	1890
Harrell, W. J	Aulander	1892
Harris, F. R	Henderson	1883
Harris, A. H	Wilmington	1894
*Harris, H. H	Wake Forest	1886
*Hassell, S	Plymouth	1893
*Hays, B. K	Oxford	1897
Haywood, F. J	Raleigh	1868
*Headen, W. E	Morehead City	1891
*Henley, S. A	Asheboro	1888
*Herring, N. B	Wilson	1888
Herron, A. M	Charlotte	1884
Hester, J. R	Prospect Hill	1894
*Hill, D. J	Lexington	1894
Hill, Joel	Lexington	1886
Hill, L. H	Germanton	1877
Hill, Thomas	Goldsboro	1879
*Hines, P. E	Raleigh	1855
*Hodges, J. A	Richmond, Va	1885
*Hodges, J. M	LaGrange	1883
Hollinsworth, W. K	Mt. Airy	1893
Holmes, Alman	Clinton	1852
*Holmes, F. H	Clinton	1896
Holt, W. T	Donnahu	1896
*Hornaday, E. H	Willow Green	1878
Houck, Albert	Lenoir	1893
Hudson, W. L	Dunn	1883
Hughes, E. W	Newbern	1885
Hughes, G. R	Pollocksville	1894
Hunter, L. W	Sardis	1880
Ingram, C B	Mt. Gilead	1892

Irwin, J. R.	Charlotte	1882
Ivie, G. M.	Stoneville	1894
Ivie, W. P.	Lenoir	1891
Jackson, C. C.	Plymouth	1896
Jenkins, C. L.	Conetoe	1894
Jenkins, J. D.	Crisp	1894
*Jewett, R. D.	Wilmington	1890
Johnson, H.	Grifton	1892
Johnson, L. L.	Angeline	1894
Jones, A. G.	Walnut Cove	1892
*Jones, Clara E.	Goldsboro	1897
Jones, C. M.	Grimesland	1895
Jones, J. W.	Tarboro	1860
*Jones, W. J.	Goldsboro	1860
Jones, W. J., Jr	Goldsboro	1894
Jones, S. B.	Charlotte	1879
*Jordan, T. M.	Hookerton	1881
Julian, C. A.	Thomasville	1893
Kent, A. A.	Lenoir	1894
King, O. D.	Albemarle	1887
Kirby, Geo. L.	Raleigh	1867
Kirkpatrick, W. L.	Crabb Tree	1895
Klutz, E. E.	Troutman	1896
*Knight, J. B. H.	Williamston	1891
*Knox, A. W.	Raleigh	1880
*Kornegay, Jas. W.	Mt. Olive	1896
Lafferty, J. S.	Concord	1890
*Laird, E. C.	Haw River	1890
Lane, W. W.	Wilmington	1870
*Laughinghouse, C. O'H.	Greenville	1894
Lawing, J. M.	Lincolnton	1887
Laxton, J. L.	Morganton	1891
Ledbetter, A. E.	Greensboro	1894
Leggett, K.	Hobgood	1885
*Lewis, C. H.	Farmer	1894
Lewis, G. W.	Fremont	1888
Lewis, H. W.	Jackson	1887
*Lewis, R. H.	Raleigh	1877
Lilly, W. H.	Concord	1874
Linville, A. Y.	Salem	1896
Littlejohn, E. M.	Thomasville	1896
Loftin, P. B.	Grifton	1890
Logan, J. E.	Greensboro	1894

Long, B. L.	Hamilton	1883
*Long, Geo. W.	Graham	1877
Long, J. W.	High Point	1884
Lott H. S.	Winston	
Love, Wm. J.	Wilmington	1870
*Lumsden, W. J.	Elizabeth City	1888
McAnally, Chas. B.	Madison	1896
McCauless, W. L.	Danbury	1894
McClure, S. C.		1886
McDonald, A. D.	Wilmington	1879
McDougald, A.	Hope Mills	1888
*McDowell, W. O.	Scotland Neck	1883
McDuffie, W. C.	Fayetteville	1876
McGeachy, R. S.	Raleigh	1895
McGee, J. W.	Raleigh	1885
*McGee, J. W., Jr.	Raleigh	1888
McKee, James	Raleigh	1870
McKenzie, W. W.	Salisbury	1894
McKinnon, Arch	Chadbourn	1888
McLauchlin, J. E.	Cool Spring	1896
McLean, N. M.	Gibson's Station	1885
McMillan, B. F.	Plain View	1884
McMillan, J. D.	Lumberton	1876
McMillan, W. D.	Wilmington	1892
*McMullan, Oscar	Elizabeth City	1889
*McMullan, T. S.	Hertford	1892
McMullen, J. H.	Edenton	1874
McNeill, J. W.	Fayetteville	1876
Marsh, J. H.	Fayetteville	1890
Matthews, T. A.	Castalia	1895
*Mayo, W. R.	Jamesville	1892
Mease, J. M.	Canton	1894
Meisenheimer, C. A.	Charlotte	1882
Meisenheimer, T. F.	Morven	1881
Mercer, W. P.	Elm City	1880
Michaux, E. R.	Greensboro	1890
Miller, J. F.	Goldsboro	1873
Mills, R. W.	Troutman	1892
Monroe, A. J.	Jonesboro	1891
Monroe, W. A.	Sanford	1888
Montague, S. J.	Winston	1880
Montgomery, J. C.	Charlotte	1895
*Montgomery, S. L.	Concord	1885
*Moore, C. E.	Wilson	1875
*Moore, E. G.	Elm City	1890
*Moore, R. A.	Moncure	1893

Moran, G. H.	Morganton	1888
Morrill, Jenness	Falkland	1888
Mosby, Chas. W	Kapps Mills	1896
*Moye, E. A	Greenville	1897
*Munroe, J. P	Davidson	1890
*Murphy, P. L	Morganton	1873
Murphy, W. E	Carr	1895
Myers, J. A	Lexington	1894
*Nelson, R. J	Robersonville	1893
Nichols, C. G	Roxboro	1891
*Nicholson, J. L	Richlands	1880
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Parris, D. C	Hillsboro	1887
*Parrott, James M	Kinston	1896
Pate, W. T	Gibson's Station	1885
Patterson, A. J	Liberty	1892
Patterson, R. A	Aurelian Springs	1887
Payne, R. L	Norfolk, Va	1881
Pemberton, W. D	Monroe	1887
*Perry. M. P	Macon	1884
Pharr, T. F	Concord	1881
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*Picot, L. J	Littleton	1875
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*Pool, J. H	South Mills	1897
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Powers, J. B	Wake Forest	1885
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*Primrose, R. S	Newbern	1897
Prince, D. M	Laurinburg	1879
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Purefoy, G. W	Asheville	1884
Ramsay, J. G	Salisbury	1855
Ray, J. L	Burnsville	1890
Reagan, J. A	Weaverville	1881

Reeves, B. E.	Lamar	1896
*Register, E. C.	Charlotte	1887
Reid, W. K.	Pineville	1896
Reitzel, J. R.	Woodleaf	1896
Renn, G. A.	Raleigh	1893
Reynolds, Carl V.	Asheville	1896
Richardson, W. J.	Greensboro	1894
Riddick, T. M.	Woodville	1894
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Roberson, C. N.	Ascend	1893
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*Robinson, M. E.	Goldsboro	1886
*Rodman, J. C.	Washington	1895
Rodwell, J. W.	Cana	1896
*Royster, H. A.	Raleigh	1895
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Royster, W. I.	Raleigh	1871
Ruffin, J. K.	Wilson	1860
Russell, F. H.	Wilmington	1895
Saine, Jno. W.	Lincolnton	1895
Sanderford, J. F.	Creedmore	1891
*Sawyer, Chas. J.	Belcross	1897
Schenck, D. R.	Greensboro	1894
Seawell, F. H.	Earpsboro	1893
Sexton, J. A.	Raleigh	1879
Shaffner, J. F.	Salem	1867
Shamberger, J. B.	Star	1892
Shepard, J. C.	Wilmington	1880
Sievers, N. S.	Salem	1877
*Sikes, G. T.	Grissom	1884
Sinclair, Duncan	Rowlands	1888
Smith, Duncan	Athens	1888
Smith, G. A.	Siler City	1894
Smith, J. B.	Pilot Mountain	1896
Smith, R. A.	Goldsboro	1882
Snipes, E. P.	Jonesboro	1890
*Speight, R. H.	Wrendale	1875
Spencer, W. O.	Yanceyville	1894
Stafford, W. G.	Burlington	1888
Stancell, R. H.	Margarettsville	1887
Stansill, J. M.	Rockingham	1879
Stanton, D. A.	High Point	1891

Steele, W. C.	Mt. Olive	1894
*Stevens, J. A.	Clinton	1883
Stevens, M. L.	Enochville	1893
Stroud, O. B.	Ore Hill	1894
Street, N. H.	Newbern	1883
Strickland, E. F.	Winston	1893
Strickland, J. T.	Nashville	1895
Sugg, E. H.	Snow Hill	1895
Summerell, E. M.	Mill Bridge	1883
Summers, Chas. L.	Winston	1896
Sutton, W. G.	Winston	1896
Tate, R. W.	Greensboro	1887
*Tayloe, D. T.	Washington	1885
*Tayloe, Joshua	Washington	1893
Taylor, H. L.	St. Paul, Minn.	1871
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*Thomas, Geo. Gillett	Wilmington	1871
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*Tucker, J. H.	Henderson	1878
Tull, Henry	Kinston	1876
Turlington, W. E.	Benson	1876
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Turner, J. A.	High Point	1891
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*Utley, B. S.	Holly Springs	1886
Vestal, W. J.	Tyro Shops	1894
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Von Ruck, Karl	Asheville	1891
Wakefield, W. H.	Charlotte	1893
Waldrop, J. G.	Hendersonville	1891
Walker, C. E.	Huntersville	1894
Walton, J. C.	Reidsville	1879
Watson. D. I.	Southport	1894
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Way, J. Howell	Waynesville	1887
*Weaver, H. B.	Asheville	1881
West, G. H.	Newton	1895
Wharton, L. D.	Smithfield	1894
Whitaker, R. A.	Trenton	1885
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*Whitehead, W. H	Rocky Mount	1875
*Whitehead, R. H	Chapel Hill	1891
*White, J. W	Wilkesboro	1890
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